Installation Instructions

for use by heating contractor

Venting System

for Vitodens 100-W WB1B Series
and Vitodens 200-W WB2B Series

Please file in Service Binder

Venting System

Vitodens 100-W, WB1B and
Vitodens 200-W WB2B Series
(with preinstalled coaxial vent pipe adaptor)

IMPORTANT

Read and save these instructions for future reference.

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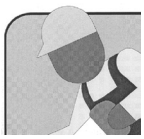
Safety, Installation and Warranty Requirements

Please ensure that these instructions are read and understood before commencing installation. Failure to comply with the instructions listed below and details printed in this manual can cause **product/property damage**, **severe personal injury**, and/or **loss of life**. Ensure all requirements below are understood and fulfilled (including detailed information found in manual subsections).

■ **Licensed professional heating contractor**
The installation, service, and maintenance of this equipment *must be* performed by a licensed professional heating contractor.

▶ *Please see section entitled "Important Regulatory and Installation Requirements" in the Installation Instructions.*



■ **Carbon monoxide**
Improper installation, service and/or maintenance can cause flue products to flow into living space. Flue products contain *poisonous* carbon monoxide gas.

▶ *For information pertaining to the proper installation, service and maintenance of this equipment to avoid formation of carbon monoxide, please read these Installation Instructions carefully.*

■ **Equipment venting**
Never operate boiler without an *installed venting system*. An improper venting system can cause carbon monoxide poisoning.

■ **Warranty**
Information contained in this and related product documentation must be read and followed. *Failure to do so renders warranty null and void.*

■ **Product documentation**
Read all applicable documentation before commencing installation. Store documentation near boiler in a readily accessible location for reference in the future by service personnel.

▶ *For a listing of applicable literature, please see section entitled "Important Regulatory and Installation Requirements" in the Installation Instructions.*

⚠ WARNING

Installers must follow local regulations with respect to installation of carbon monoxide detectors. Follow manufacturer's maintenance schedule of boiler.

■ **Advice to owner**
Once the installation work is complete, the heating contractor must familiarize the system operator/ultimate owner with all equipment, as well as safety precautions/requirements, shut-down procedure, and the need for professional service annually before the heating season begins.

How these Installation Instructions are structured…

These Instructions cover the following venting systems for the Vitodens 100-W boiler.
Refer to the section applicable to your application for pertinent installation information.

Before proceeding with the installation, please read sections entitled *Safety* and *General Information.*
These sections are applicable to all venting systems listed and must be read before commencing the installation.

Information specific to…

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Direct Venting (Two-pipe System)

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Single Wall Venting (Room Air Dependent)

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About these Installation Instructions

Take note of all symbols and notations intended to draw attention to potential hazards or important product information. These include "WARNING", "CAUTION", and "IMPORTANT". See below.

WARNING

Indicates an imminently hazardous situation which, if not avoided, could result in death, serious injury or substantial product/property damage.

→ *Warnings draw your attention to the presence of potential hazards or important product information.*

CAUTION

Indicates an imminently hazardous situation which, if not avoided, may result in minor injury or product/property damage.

→ *Cautions draw your attention to the presence of potential hazards or important product information.*

IMPORTANT

→ *Helpful hints for installation, operation or maintenance which pertain to the product.*

→

→ *This symbol indicates that additional, pertinent information is to be found in the right-hand column.*

→ *This symbol indicates that other instructions must be referenced.*

Important Regulatory and Installation Requirements

For installations in the Commonwealth of Massachusetts, the following local requirements apply in addition to all other applicable NFPA requirements:

1) For direct-vent appliances, mechanical-vent heating appliances or domestic hot water equipment, where the bottom of the vent terminal and the air intake is installed below four feet above grade the following requirements must be satisfied.

1. If there is not one already present, on each floor level where there are bedroom(s), a carbon monoxide detector and alarm shall be placed in the living area outside the bedroom(s). The carbon monoxide detector shall comply with NFPA 720 (2005 Edition).

2. A carbon monoxide detector shall be located in the room that houses the appliance or equipment and shall:

    a. Be powered by the same electrical circuit as the appliance or equipment such that only one service switch services both the appliance and the carbon monoxide detector;
    b. Have battery back-up power;
    c. Meet ANSI/UL 2034 Standards and comply with NFPA 720 (2005 Edition); and
    d. Have been approved and listed by a Nationally Recognized Testing Laboratory as recognized under 527 CMR.

3. A Product-approved vent terminal must be used, and if applicable, a Product-approved air intake must be used. Installation shall be in strict compliance with the manufacturer's instructions. A copy of the installation instructions shall remain with the appliance or equipment at the completion of the installation.

4. A metal or plastic identification plate shall be mounted at the exterior of the building, four feet directly above the location of the vent terminal. The plate shall be of sufficient size to be easily read from a distance of eight feet away, and read **"Gas Vent Directly Below"**.

For direct-vent appliances, mechanical-vent heating appliances or domestic hot water equipment where the bottom of the vent terminal and the air intake is installed above four feet above grade the following requirements must be satisfied:

1. If there is not one already present, on each floor level where there are bedroom(s), a carbon monoxide detector and alarm shall be placed in the living area outside the bedroom(s). The carbon monoxide detector shall comply with NFPA 720 (2005 Edition).

2. A carbon monoxide detector shall:

    a. Be located in the room that houses the appliance or equipment;
    b. Be either hard-wired or battery powered or both; and
    c. Shall comply with NFPA 720 (2005 Edition).

3. A Product-approved vent terminal must be used, and if applicable, a Product-approved air intake must be used. Installation shall be in strict compliance with the manufacturer's instructions. A copy of the installation instructions shall remain with the appliance or equipment at the completion of the installation.

Important Regulatory and Installation Requirements *(continued)*

IMPORTANT

When replacing parts, use original Viessmann or Viessmann approved replacement parts.

For coaxial venting systems only:
Venting material to be supplied by Viessmann only.

The venting system must be installed by a licensed professional heating contractor familiar with the operation and maintenance of heating appliances and venting. Before installing this product, ensure that the complete installation literature has been read. Failure to follow proper installation procedures as stated in these instructions, including vent pitch and proper appliance connections, may violate local, provincial/state, or national codes and cause unsafe conditions which may lead to severe property damage or personal injury.

The venting system must be installed in accordance with local building code requirements as well as national codes. For installations in Canada use CAN/CSA-B149.1 Natural Gas Installation Code or CAN/CSA-B149.2 Propane Installation Code as applicable; in the U.S. use the National Fuel Gas Code ANSI Z223.1 or NFPA Standard 54.

To ensure safe operation of the appliance, Viessmann recommends that the system be inspected once a year by a qualified service technician.

Every venting system must be planned and installed for optimum performance and safety. These Installation Instructions are designed to help you determine venting requirements and limitations with respect to installation. Please read and follow these instructions carefully.

It is the responsibility of the installer to contact local building and fire officials concerning any installation restrictions and/or inspection requirements that may apply. Permits may be required before commencement of the installation.

The vent termination for side wall vent installations should be located on a wall that is least affected by prevailing winds. High winds may affect boiler operation and/or degrade the exterior finish of the wall. They may also cause recirculation of the appliance's own flue products. Recirculation of flue products can result in poor combustion and inlet condensation problems. If wind is a problem, steps must be taken to shield the vent termination from high winds, such as building a fence or planting shrubs. Ensure that the total equivalent vent length is not exceeded.

Operation with balanced flue using Viessmann supplied coaxial vent system

IMPORTANT

Side wall vent installations must include Viessmann protective screen.

Because of its sealed combustion chamber, the Vitodens gas-fired condensing boiler is suitable for operation with **balanced flue.**
The Vitodens boiler, flue gas adaptor and parallel adaptor (if used) are approved together under CSA 4.9. ANSI Z21.13 - 2007 Standard.
The venting system components are tested and listed to ULCS636 by Intertek and are marked and labelled on ech component.

Listed/liste
59762
ULC S636 (1995)

Gas Vent - BH
Class II - 110°C max.

Do not mix pipe, fittings, or joining methods from different vent system manufacturers. Do not use adhesives of any kind with this venting system.

The vent length requirements stated in this manual (starting on page 22 for side wall vent installations and page 31 for vertical vent installations) must be observed.

The combustion air is supplied and the flue gas discharged via a coaxial double pipe. Combustion air is fed through the circular gap between the outer aluminum air intake pipe and the vent pipe. Flue gases are discharged via an inner pipe constructed from flame-retardant plastic (polypropylene rated for a maximum temperature of 230°F / 110°C).

Not all inspection authorities require a leak test of the vent-air intake system in conjunction with the wall-mounted gas-fired boiler during system start-up. In cases where the leak test is not required, Viessmann recommends that the heating contractor perform a simplified leak test when starting up the system. For this purpose, it is sufficient to measure the CO_2 concentration in the combustion air of the circular gap of the coaxial vent-air intake pipe. The vent pipe is considered sufficiently leak-proof if the CO_2 concentration in the combustion air is no higher than 0.2 % and the O_2 concentration no lower than 20.6 %. **If higher CO_2 or lower O_2 values are measured, the flue gas system must be checked for leaks.**

The coaxial venting material can be extended (without exceeding the maximum equivalent length) beyond the outside wall of the structure, provided that the coaxial venting material is installed in an enclosed, insulated and waterproof chase that is acceptable for outdoor installation. The vent termination location must comply with the instructions and codes stated in this manual.

IMPORTANT

Potential gaps between the vent-air intake and the surrounding construction which may cause air, rain or flue gases to leak into the wall or the building, must be sealed with approved sealant/caulking to prevent leakage of any kind.

Important Regulatory and Installation Requirements *(continued)*

Table 1. Clearance to combustibles

Top	Front	Rear	Left	Right	Vent pipe
0"/mm	0"/mm	0"/mm	0"/mm	0"/mm	0"/mm

Table 2. Recommended minimum service clearance

Top	Front	Rear	Left	Right
12"/305 mm	28"/711 mm	0"/mm	6"/152 mm	0"/mm

For details refer to Vitodens 100-W and 200-W Installation Instructions (as may be applicable).

For coaxial venting systems only:

In the event of flue gas leakage, the boiler enclosure provides a tightly sealed system on the inside of the building. Escaping flue gas is fed back into the combustion air intake, preventing any flue gas from entering the living area.
The venting system may be concealed in a chase.

Minimum and maximum wall thickness through which the horizontal vent-air intake termination may be installed:
Minimum: 1"/25.4 mm
Maximum: 19.6"/497.8 mm

Vent-air intake system must be properly installed and sealed.

WARNING

**The Vitodens 100-W and 200-W boilers are NOT approved for common-venting applications.
Do not attempt to common-vent the Vitodens 200-W boiler with any other appliance.**

WARNING

Failure to ensure that all flue gases have been safely vented to the outdoors can cause property damage, severe personal injury, or loss of life. Flue gases may contain deadly carbon monoxide.

CAUTION

Under certain climatic conditions some building materials may be affected by flue products expelled in close proximity to unprotected surfaces. Sealing or shielding of the exposed surfaces with a corrosion resistant material (e.g. aluminum sheeting) may be required to prevent staining or deterioration. The protective material should be attached and sealed (if necessary) to the building before attaching the vent termination. It is strongly recommended to install the vent termination on the leeward side of the building.

General Installation Information

Installation steps (outline)

⚠ WARNING

Ensure that the entire venting system is protected from physical damages. A damaged venting system may cause unsafe conditions.

⚠ WARNING

The venting system is approved for indoor installations only.
Do not install the venting system outdoors.

IMPORTANT

Boiler operation in marine environments (damp, salty coastal areas):

The service life of the boiler's exposed metallic surfaces, such as the casing and fan housing, is directly influenced by proximity to damp and salty marine environments. In such areas, higher concentration levels of chlorides from sea spray, coupled with relative humidity, can lead to degradation of the exposed metallic surfaces mentioned above. Therefore, it is imperative that boilers installed in such environments not be installed using direct vent systems which draw outdoor air for combustion. Such boilers must be installed using room air dependent vent systems; i.e. using room air for combustion. The indoor air will have a much lower relative humidity and, hence, the corrosion will be minimized.

- Route vent pipe as directly as possible and with as few bends as possible to the boiler.
- Check proper location of gaskets in all coaxial pipe collars.
  (Only use supplied parts with the polypropylene venting system.)
  Apply moderate amount of supplied lubricant to slip joint ends of vent and air intake pipe collars.
- Slide pipes into each other with a gentle twisting motion.
- Condensate must drain from the flue pipe to the boiler. Ensure a suitable gradient of at least 3° (approx. 2" per 3.3 ft. / 50 mm per 1 m).
- Use a hacksaw and sheet metal snips to cut pipes to length (if necessary). Use a file to smooth rough edges. Pipe must be round and not bent into an oval shape.

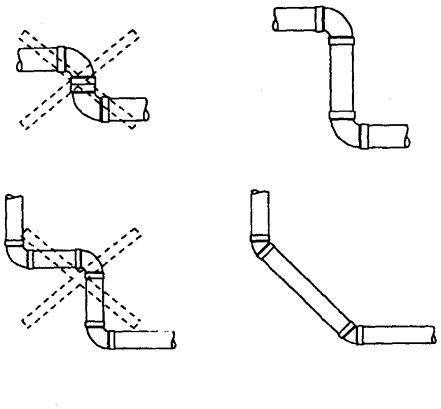
IMPORTANT

When cutting pipes to length, debur and clean pipes.

- *For stainless steel and CPVC venting systems:*
  In conjunction with these instructions, follow the installation instructions supplied by the special venting manufacturer.
  Viessmann Venting System Instructions supersede the instructions supplied by the manufacturer.

General Installation Information *(continued)*

Recommended venting practice



When installing a venting system the following recommended venting practices apply:

- Keep length and number of 90° elbows to a minimum.
- Try not to use back-to-back 90° elbows.
- Use 45° elbows where possible to minimize the number of 90° elbows in case redirection of flue gas is required.
- The special vent system shall not be routed into, through, or within any other vent such as an existing masonry or factory-built chimney.

Exception:
A masonry chimney flue may be used to route the venting system only if **no other** appliance is vented in the same flue.

Leak test (for coaxial venting systems only)

Viessmann recommends that the heating contractor perform a simplified leak test during boiler start-up. For this purpose it is sufficient to measure the CO_2 concentration of the combustion air in the annular gap of the air intake pipe. The vent pipe is considered sufficiently leak-proof if a CO_2 concentration in the combustion air no higher than 0.2% or an O_2 concentration no lower than 20.6% is measured relative to a starting O_2 concentration of 20.9%.

If higher CO_2 values or lower O_2 values are measured, inspect the venting system thoroughly.

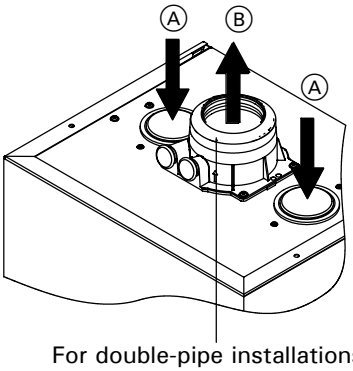
Continuous short cycling of the boiler can indicate a leaking venting system.

Note that the vent pipe adaptor comes with two measurement ports, one for combustion air intake measurement and one for flue gas measurement.

General Installation Information *(continued)*

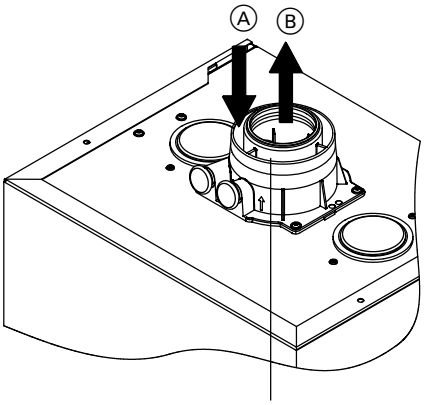
Boiler vent connections

Boiler models Vitodens 100-W WB1B 10-26/30 and Vitodens 200-W WB2B 9-19/26/35



For double-pipe installations, the combustion air inlet cover must be in place.

Fig. 1



Remove and discard combustion air inlet cover when installing coaxial vent pipe system.

Fig. 2

Single- or double-pipe installation (see Fig. 1)
- Ⓐ Combustion air (requires 2″ CPVC adaptor)
- Ⓑ Flue gas (requires 2″ CPVC adaptor)

Coaxial vent pipe system (see Fig. 2 and 3)
- Ⓐ Combustion air
- Ⓑ Flue gas

Boiler models Vitodens 200-W WB2B 17-45/60 and WB2B 30-80/105

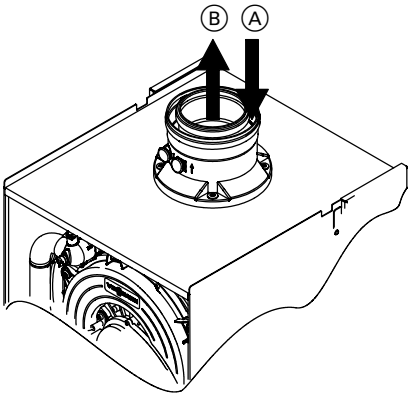


Fig. 3

Side Wall Venting Layouts (Coaxial)

Layout with basic coaxial vent kit componentry

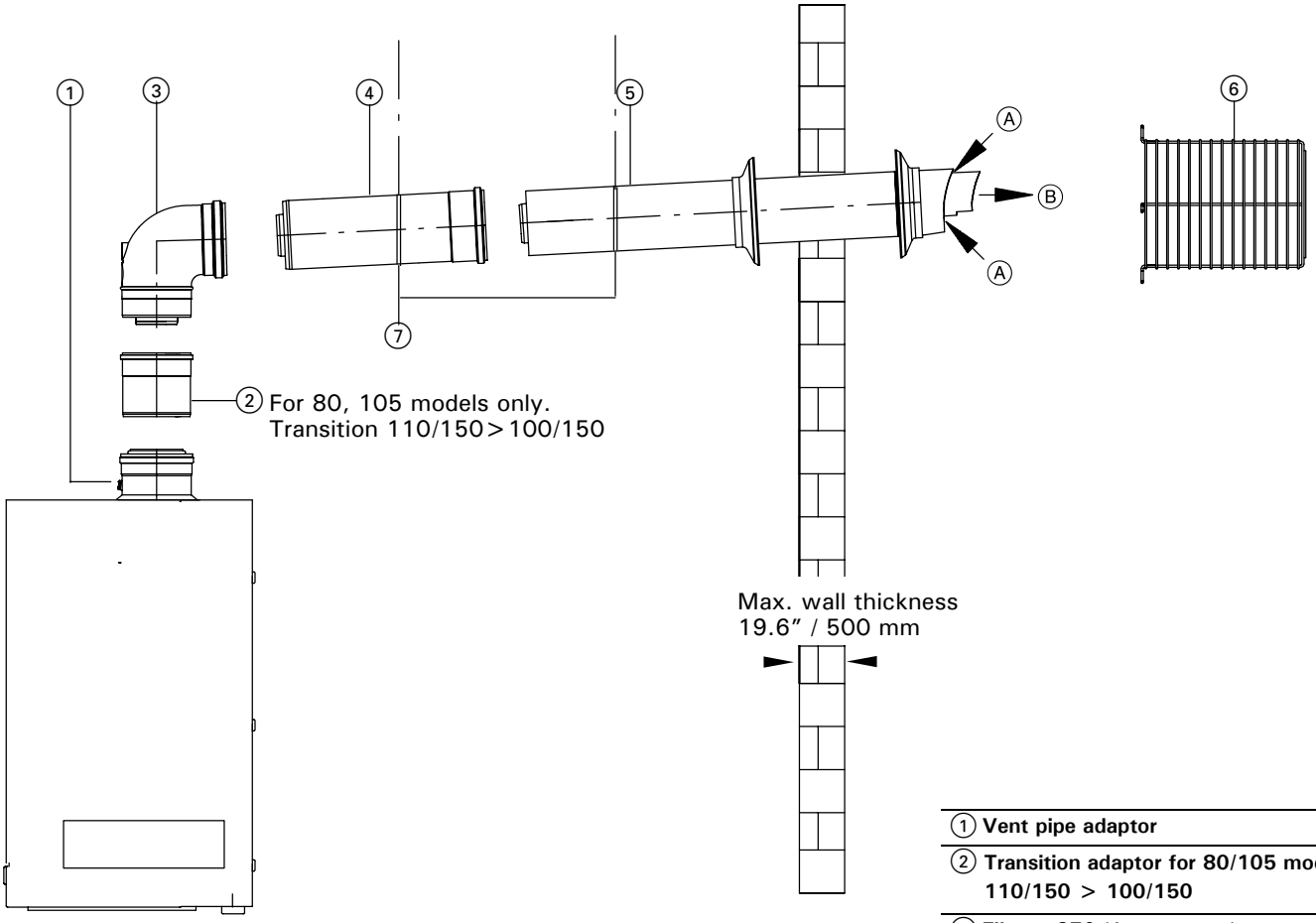


Fig. 4 Standard side wall venting layout, using basic vent kit components for vent systems 60/100, 80/125 and 100/150.

Table 3. Standard sizes of boiler flue gas vent adaptors (item ①)

Boiler model	Adaptor size
WB1B 10-26	60/100
WB1B 10-35	60/100
WB2B 9-19	60/100
WB2B 9-26	60/100
WB2B 9-35	60/100
WB2B 17-45	80/125
WB2B 17-60	80/125
WB2B 30-80	110/150
WB2B 30-105	110/150

① **Vent pipe adaptor**

② **Transition adaptor for 80/105 models 110/150 > 100/150**

③ **Elbow,** 87° (1 per carton)

④ **Straight pipe**
3.3 ft./1 m long

⑤ **Vent termination**
(incl. wall flashings)
Important!
Total length of vent termination pipe is 31"/787 mm. If required, the vent termination pipe may be shortened by max. 12"/305 mm (min. vent termination length is 19"/483 mm).
(See page 18).

⑥ **Protective screen**
Warning!
Protective screen MUST be installed.

⑦ **Mounting clip,** white (use at least 2)

⑧ **Brass adaptor** (M8 x $^{5}/_{16}$" - 18) **and Set of screws** (#8 x $^{3}/_{8}$")
(7, 8 and 9 shown on following page)

Ⓐ **Combustion air intake**

Ⓑ **Flue gas outlet**

a **Total vent length**[*2]

[*2] *See section Vent Length Requirements on page 22 in this manual.*

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Side Wall Venting Layouts (Coaxial) *(continued)*

Layout with basic coaxial vent kit componentry *(continued)*

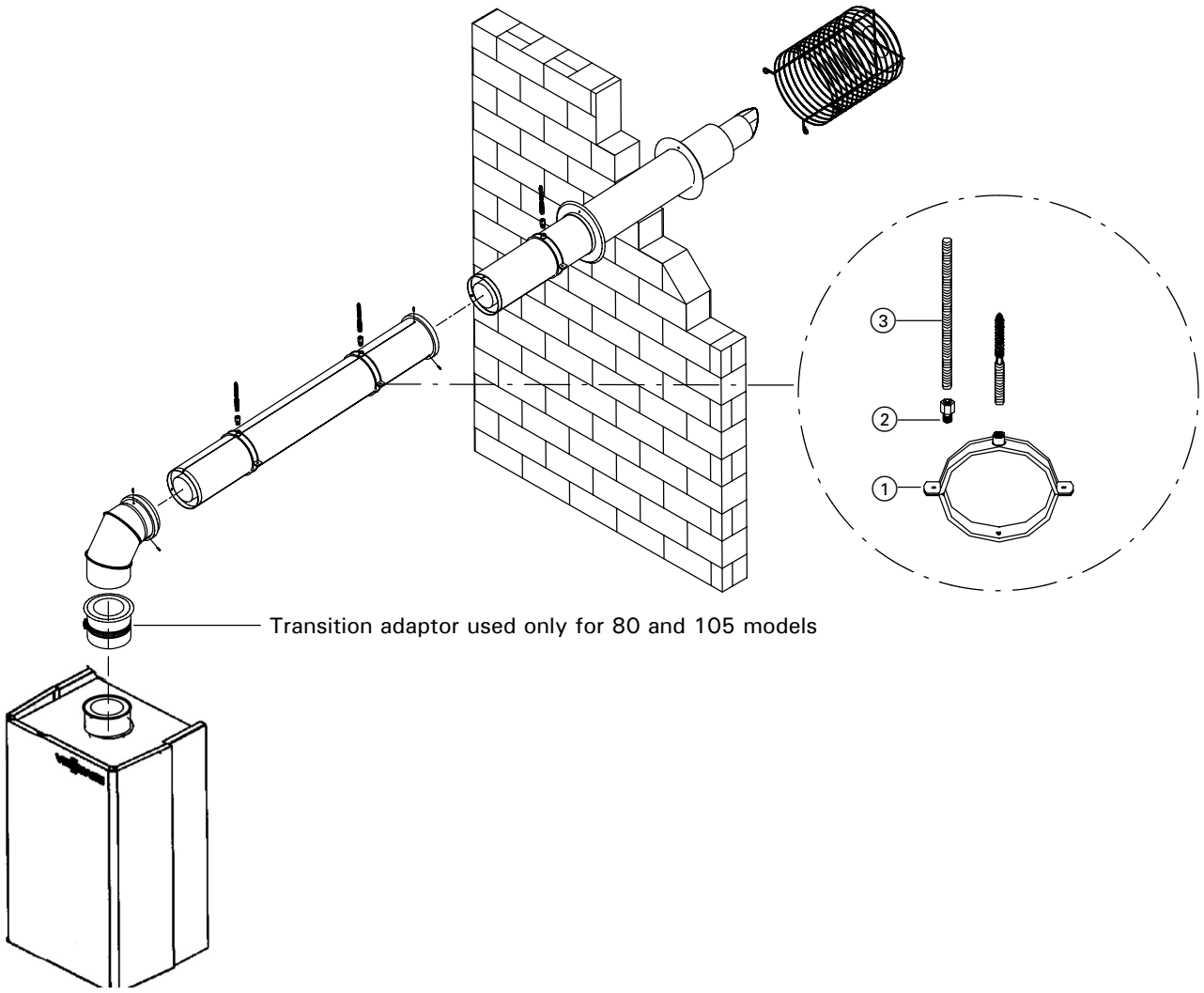


Fig. 5 *Side wall venting layout, using basic vent kit components for vent systems 60/100, 80/125 and 100/150*

① **Mounting clip** (c/w 4" screw)
② **Brass adaptor** (supplied)
③ **All-threaded rod** (field supplied)

See section Installation of Anchoring System on page 21 in this manual for detailed installation information of anchoring system.

Side Wall Venting Layouts (Coaxial) *(continued)*

Layout with basic coaxial vent kit and accessory componentry

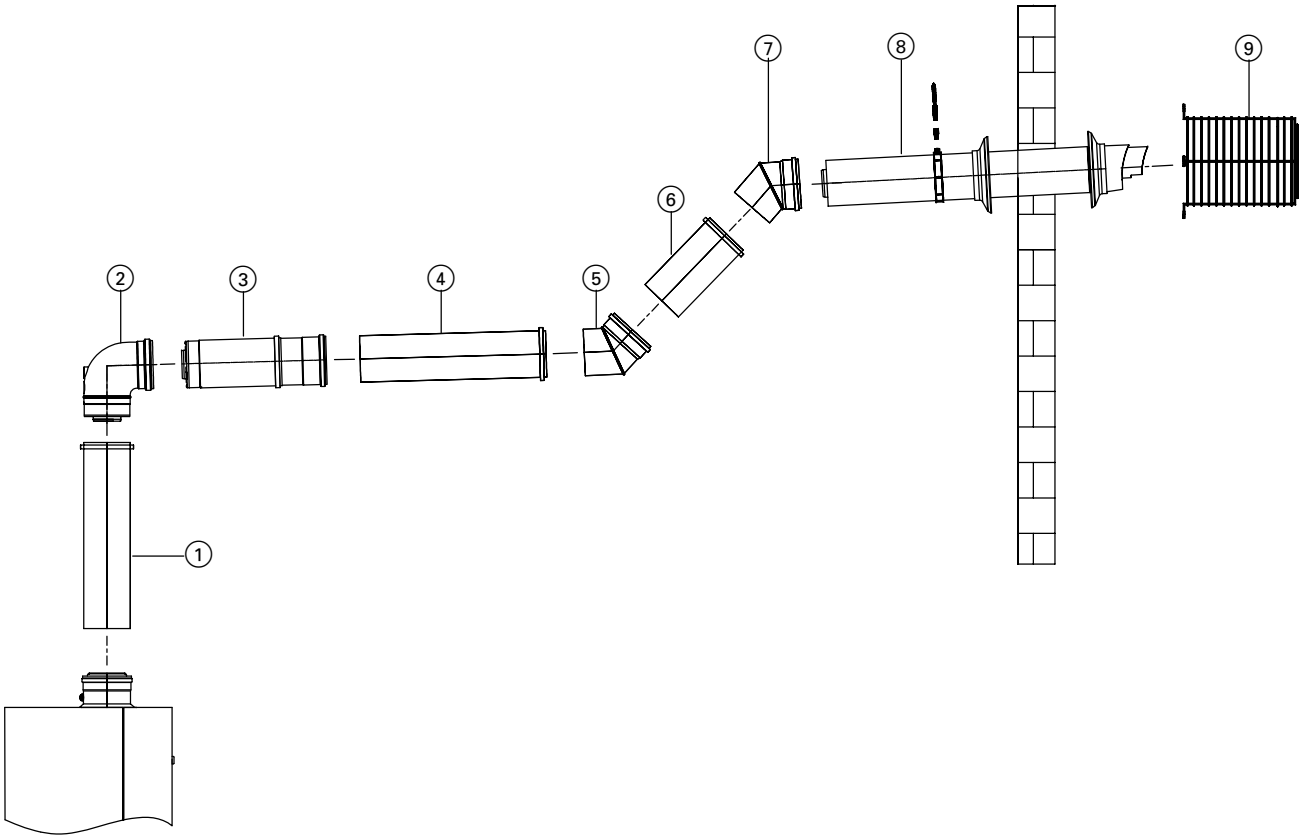


Fig. 6 *Side wall venting layout, using basic vent components and accessory parts for vent system 60/100, 80/125 and 100/150*

For Vitodens WB2B boiler models 80/105 a transition adaptor is required (see page 36).

① ④ ⑥	**Straight pipe**[*2] 3.3 ft./1 m long or 1.6 ft./0.5 m long
②	**Elbow,** 87° (1 per carton)
③	**Telescopic extension** (sliding coupling)
⑤ ⑦	**Elbow,** 45° (2 per carton)
⑧	**Vent termination** (incl. wall flashings) **Important! Total length of vent termination is 31"/787 mm. If required, the vent termination may be shortened by max. 12"/305 mm (min. vent termination length is 19"/483 mm)** (see page 18).
⑨	**Protective screen** **Warning! Protective screen must be installed.**
	Mounting clip, white (use at least 2)
	Brass adaptor (M8 x $^5/_{16}$" - 18) **and Set of screws** (#8 x $^3/_8$")

[*2] *Other lengths may be used provided that the maximum equivalent vent length is not exceeded.*

Component Installation Guide

Offset installation

(e.g. for offset venting systems)
(2 × 45° elbow)

Minimum offset of approx. 4"/100 mm:
Slide two 45° elbows together
and connect to coaxial vent-air intake system.
(vent system 80/125)

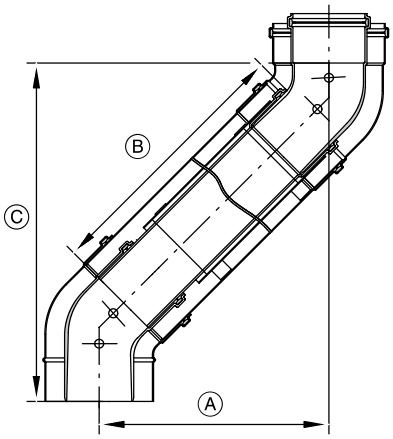
When the offset is larger than 4"/100 mm:
Depending on the offset, insert extension straight pipe (Ⓑ) between the two 45° elbows.
(vent system 80/125)

Table 4. Vent system 60/100

Offset (in./mm)	Ⓐ	6/ 150	8/ 200	9.8/ 250	12/ 300	13.7/ 350	15.3/ 390
Extension (in./mm)	Ⓑ	6.3/ 161	9.1/ 232	11.9/ 303	14.7/ 373	17.5/ 444	19.7/ 501
Height (in./mm)	Ⓒ	9.8/ 249	11.8/ 299	13.7/ 349	15.7/ 399	17.7/ 449	19.3/ 489

Table 6. Vent system 80/125

Offset (in./mm)	Ⓐ	6/ 150	8/ 200	9.8/ 250	12/ 300	13.7/ 350	15.3/ 390
Extension (in./mm)	Ⓑ	5/ 122	7.6/ 193	10.4/ 264	15.1/ 384	16/ 405	19.7/ 500
Height (in./mm)	Ⓒ	10.6/ 270	13/ 330	15/ 380	17/ 430	19/ 480	21.5/ 547



Minimum offset of approx. 5"/120 mm:
Slide two 45° elbows together
and connect to coaxial vent-air intake system.

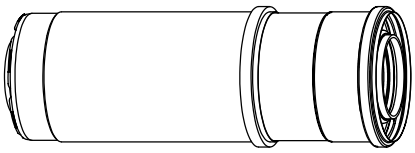
When the offset is larger than 5"/120 mm:
Depending on the offset, insert extension straight pipe (Ⓑ) between the two 45° elbows.
(vent system 100/150)

Table 5. Vent system 100/150

Offset (in./mm)	Ⓐ	8/ 200	9.8/ 250	12/ 300	13.7/ 350	15.3/ 390
Extension (in./mm)	Ⓑ	6.7/ 170	8.5/ 215	11.2/ 285	14/ 355	16.1/ 410
Height (in./mm)	Ⓒ	12.6/ 320	14.2/ 360	16.1/ 410	18.1/ 460	19.7/ 500

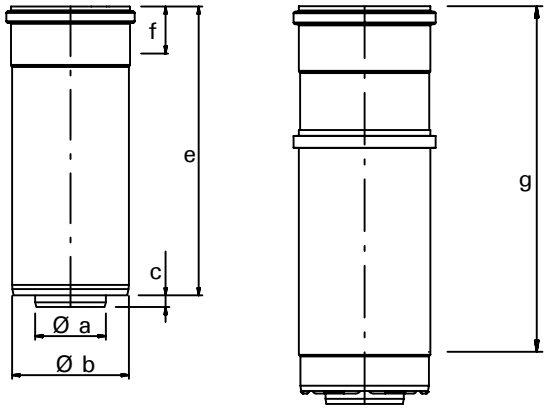
Component Installation Guide *(continued)*

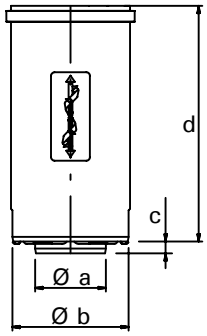
Coaxial vent telescopic extension installation (sliding coupling)



The telescopic extension is used where minor cutting or adjustment to the length of the vent pipe is required. See dimension “g” in table below.

Fig. 7 Coaxial vent telescopic extension





Boiler model	a in / mm	b in / mm	c in / mm	d in / mm	e in / mm	f (max. insertion) in / mm	g in / mm
WB1B 26, 35 WB2B 9-19; 9-26, 9-35	2.4 / 60	4 / 100	0.4 / 10	7.9 / 200	9.6 / 245	1.2 / 30	min. 10.4 / 265 max. 16 / 405
WB2B 17-45; 17-60	3.1 / 80	5 / 125	0.4 / 10	7.9 / 200	9.6 / 245	1.2 / 30	min. 11/ 280 max. 15.5 / 395
WB2B 30-80;30-150	4/100	6 / 150	0.4 / 10	7.9 / 200	9.6 / 245	1.2 / 30	min. 11/ 280 max. 15.5 / 395

Component Installation Guide *(continued)*

Coaxial vent termination installation

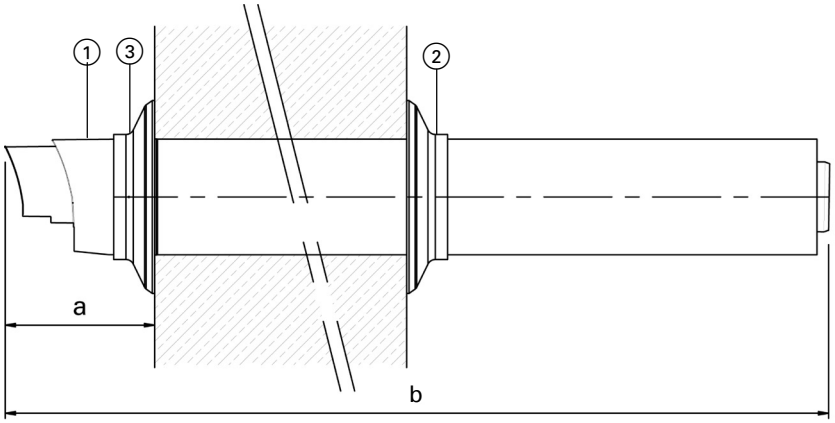


Fig. 8 Coaxial vent termination for vent system 60/100, 80/125 and 100/150

① Vent termination
② Wall flashing (inside)
③ Wall flashing (outside)

Vent system	a in / mm	b in / mm
60/100	4.5 / 114	27.8 / 705
80/150	5.3 / 135	29 / 735
100/150	7.3 / 185	30.8 / 782

Table 7. Wall opening information

Vent system	Opening Ø
60/100	4¼"/108 mm
80/125	5¼"/133 mm
100/150	6$^{3}/_{8}$"/160 mm

Side wall vent termination installation

1. Provide side wall opening (see table above) to install vent termination.
2. Slide vent termination ① with wall flashing ③ into opening (drain openings ⑤ must be located on the outside of the wall, pointing downward).
3. Attach wall flashing ② to inside of wall using the screws and plugs provided.
4. Attach wall flashing ③ to outside of wall.

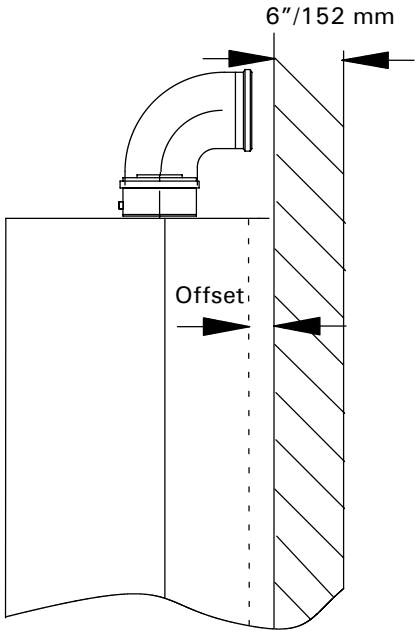


Fig. 9

When installing a side wall vent system with the minimum equivalent vent length (87° elbow and vent termination shortened to 19"/483 mm) from boiler back to the outside wall, a wall thickness of at least 6"/152 mm is required.
For walls with a thickness less than 6"/152 mm, means must be provided to offset the boiler from the wall (see fig. 9).

IMPORTANT

Total length of vent termination is 31"/787 mm. If required, the vent termination may be shortened by max. 12"/305 mm (min. vent termination length is 19"/483 mm).

IMPORTANT

Potential gaps between the vent-air intake and the surrounding construction which may cause air, rain or flue gases to leak into the wall or the building, must be sealed with approved outdoor sealant/caulking to prevent leakage of any kind.

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Component Installation Guide *(continued)*

Coaxial vent termination installation *(continued)*

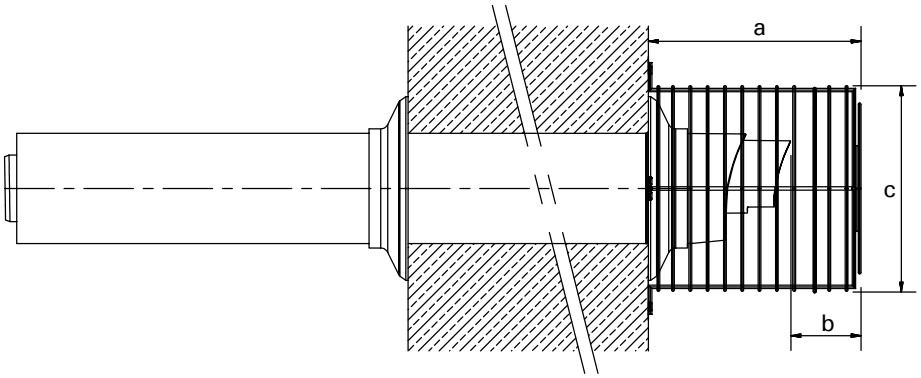

Fig. 10 Protective screen, side view for vent systems 60/100, 80/125 and 100/150

Dimensions

Model	Vent system	a	b	c
9-19, 26, 35	60/100	12″ / 305 mm	7.5″ / 190mm	9.5″ / 241 mm
17-45, 60	80/125	12″ / 305 mm	6.7″ / 170mm	9.5″ / 241 mm
30-80, 105	100/150	12″ / 305 mm	4.7″ / 120mm	9.5″ / 241 mm

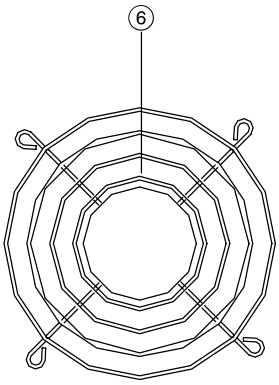

Fig. 11 Protective screen, front view

⑥ Protective screen

6. Secure protective screen ⑥ (fig. 11) into place, using the four stainless steel screws and plugs provided.

IMPORTANT

The protective screen MUST be installed.

7. Connect vent termination from inside and route toward boiler with min. 3° downward slope.

Component Installation Guide *(continued)*

Vent termination location requirements (for installations in Canada)

The vent must be installed observing local regulations in addition to National Codes, CAN/CSA-B149.1 or 2.
A vent must **NOT** terminate...

1. ....directly above a paved sidewalk or paved driveway which is located between two single-family dwellings and serves both dwellings.

2. ....less than 7 ft./2.13 m above a paved sidewalk or a paved driveway located on public property.

3. ....within 6 ft./1.83 m of a mechanical air supply inlet *1 to any building (dryer vents, non-sealed combustion furnace and hot water heater vents are considered to be mechanical air inlets).

4. ....above a meter/regulator assembly within 3 ft./0.9 m horizontally of the vertical centerline of the regulator vent outlet and to a maximum vertical distance of 15 ft./4.5 m.

5. ....within 3 ft./0.9 m of any gas service regulator vent outlet.

6. ....less than 1 ft./0.3 m above grade level or anticipated snow level (consult local building authorities or local weather office). Locate the vent termination in such a way that it cannot be blocked by snow.

7. ....within the following distances of a window or door which can be opened in any building, any non-mechanical air supply inlet to any building or the combustion air inlet of any other appliance:

- 1 ft./0.3 m for inputs up to and including 100 000 Btu/h/30 kW (applicable only to boiler model WB1B 10-26).
- 3 ft./0.9 m for input exceeding 100 000 Btu/h/30 kW (applicable to boiler model WB1B 10-35).

8. ....underneath a veranda, porch or deck, unless

- the veranda, porch, or deck is fully open on a minimum of two sides beneath the floor, and
- the distance between the top of the vent termination and the underside of the veranda, porch, or deck is greater than 1 ft./0.3 m.

9. ....in areas where condensation may cause problems, such as above planters, patios, or adjacent to windows where flue gases may cause fogging.

10. ....within 3 ft./0.9 m to the property line (advisable, not mandatory; please check with local building authorities and municipal bylaws).

11. ....at a location where ice formation on the ground can present a hazard.

12. ....so that the flue gases are directed toward brickwork, siding, or other construction, in such a manner that may cause damage from heat or condensate from the flue gases.

13. ....where discharging hot flue gases may cause property damage or personal injury.

14. ....within 3 ft./0.9 m from an inside corner of outside walls.

*1 *Including heat recovery units.*

Component Installation Guide *(continued)*

Vent termination location requirements (for installations in the U.S.A.)

The vent must be installed observing local regulations in addition to National Codes, ANSI-Z223.1 or NFPA 54.
A vent must **NOT** terminate...

1. ....less than 7 ft./2.13 m above a paved sidewalk or a paved driveway located on public property.

2. ....within 4 ft./1.2 m horizontally from service regulator vents, electric and gas meters as well as relief equipment.

3. ....at least 3 ft./0.9 m above any forced air inlet located within 10 ft./ 3 m.

4. ....less than 1 ft./0.3 m above grade level or anticipated snow level (consult local building authorities or local weather office). Locate the vent termination in such a way that it cannot be blocked by snow.

5. ....within 1 ft./0.3 m of a window or door which can be opened in any building, any non-mechanical air supply inlet to any building or the combustion inlet of any other appliance.

6. ....in areas where condensation may cause problems, such as above planters, patios, or adjacent to windows where flue gases may cause fogging.

7. ....within 3 ft./0.9 m to the property line (advisable, not mandatory; please check with local building authorities and municipal bylaws).

8. ....at a location where ice formation on the ground can present a hazard.

9. ....so that the flue gases are directed toward brickwork, siding, or other construction, in such a manner that may cause damage from heat or condensate from the flue gases.

10. ....where discharging hot flue gases may cause property damage or personal injury.

11. ....within 3 ft./0.9 m from an inside corner of outside walls.

Installation of Anchoring System

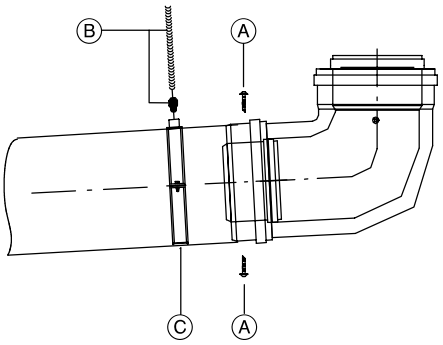

Fig. 12

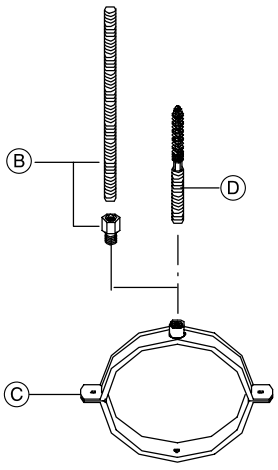

Fig. 13

The venting system must be securely supported by an anchoring system suitable for the weight and design of the materials employed. To do so, use supplied mounting clips (see Ⓒ fig. 12, and fig. 13).

The joints in the horizontal section of the Vitodens 200-W venting system must be secured with the supplied sheet metal screws Ⓐ (see fig. 9) to prevent the system from sagging.

The 4"/101.6 mm screws Ⓓ supplied with the mounting clip provide wall or ceiling support for a
- minimum distance of 2"/50.8 mm
- maximum distance of 3¼"/82.5 mm

(see fig. 13).

If a longer anchoring system is required use brass adaptors M8 x $^{5}/_{16}$" (supplied) with $^{5}/_{16}$" all-threaded rods Ⓑ (field supplied) (see fig. 13).

The venting system must be supported as outlined by one anchor per straight vent pipe. Viessmann recommends the installation of the anchor(s) near the vent joint. See illustration (fig. 5) of side wall venting layout on page 14 of this manual.

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Vent Length Requirements

Maximum vent length

Table 8.

Standard sizes of boiler flue gas adaptors

Boiler model	Adaptor size
WB1B 10-26 WB1B 10-35	60/100
WB2B 9-19 WB2B 9-26 WB2B 9-35	60/100
WB2B 17-45 WB2B 17-60	80/125
WB2B 30-80 WB2B 30-105	100/150

Table 9.

Boiler model	Vent system		
	60/100	80/125	100/150
WB1B 10-26 WB1B 10-35	82 ft / 25m (see Fig. 14)	98 ft / 30m *1 (see Fig. 15)	118 ft / 36m *2 (see Fig. 15)
WB2B 9-19 WB2B 9-26	33 ft / 10m	43 ft/ 13m *1	52 ft / 16m *2
WB2B 9-35	26 ft / 8m	36 ft / 11m *1	49 ft / 15m *2
WB2B 17-45 WB2B 17-60		33 ft / 10m	43 ft/ 13m *3
WB2B 30-80 WB2B 30-105			43 ft/ 13m

*1 *If used with increasers 60/100 to 80/125.*
*2 *If used with increasers 60/100 to 100/150.*
*3 *If used with increasers 80/125 to100/150.*

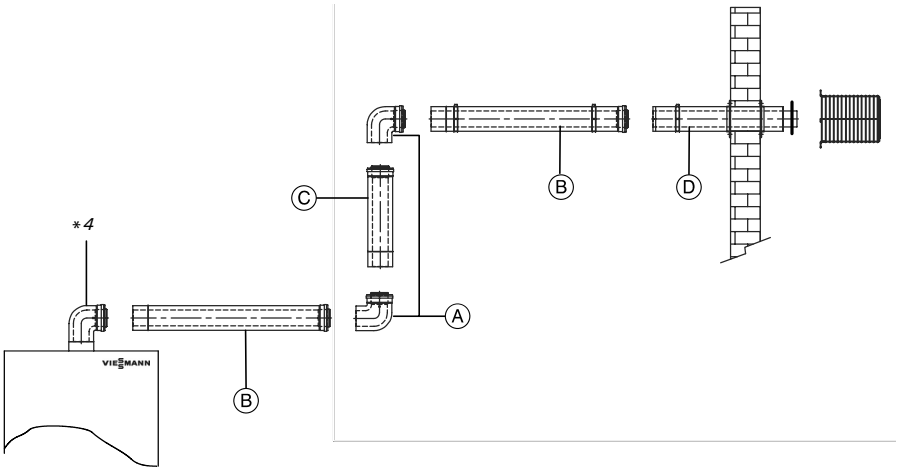

Fig. 14 Equivalent vent length calculation

Ⓐ 87° elbow
Ⓑ Vent pipe (3.3 ft./1 m)
Ⓒ Vent pipe (1.6 ft./0.5 m)
Ⓓ Vent termination

*4 *First elbow not included in equivalent vent calculation.*

- For maximum equivalent vent length on all models see tables 8. and 10., and Figs. 14 (left) and 15 on the following pages.
- Do not exceed the maximum vent length.
- Do not use more than five elbows (87° or 45°) within one vent system (first elbow is included in count).
- First 87° elbow on boiler is not included in equivalent vent length calculation.

Table 10.

Type of fitting	Equivalent length
87° elbow/ 87° inspection tee	1.6 ft./0.5 m
45° elbow	1 ft./0.3 m

Equivalent vent length calculation example

2 x 87° elbow ..... 3.2 ft./1 m
2 x vent pipe (1 m) ..... 6.6 ft./2 m
1 x vent pipe (0.5 m) ..... 1.6 ft./0.5 m
1 x vent termination ..... 2.4 ft./0.73 m
Total equivalent length 13.8 ft./4.23 m

IMPORTANT

First elbow not included in equivalent vent calculation.
Always include vent termination length in calculations.

Vent Length Requirements *(continued)*

Maximum vent length with increasers

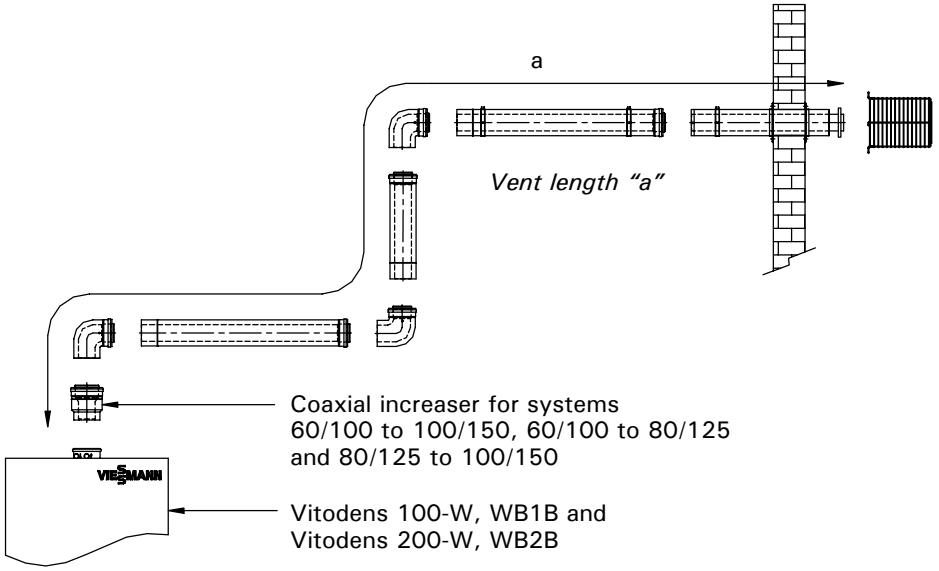

Fig. 15 Vitodens 100-W WB1B and 200-W WB2B boilers with increasers

Minimum vent length

The minimum equivalent vent length for all models is 19″/483 mm (length of the vent termination when cut to the minimum permissible length).

Please note that the first 87° elbow on boiler is not included in equivalent length calculation.

Vertical Venting Layouts (Coaxial)

Layout of vertical vent system with accessories

Please note that there is no basic vent kit available for this vertical vent system. Select from the vertical vent components below as required. Do not exceed maximum equivalent vent length.

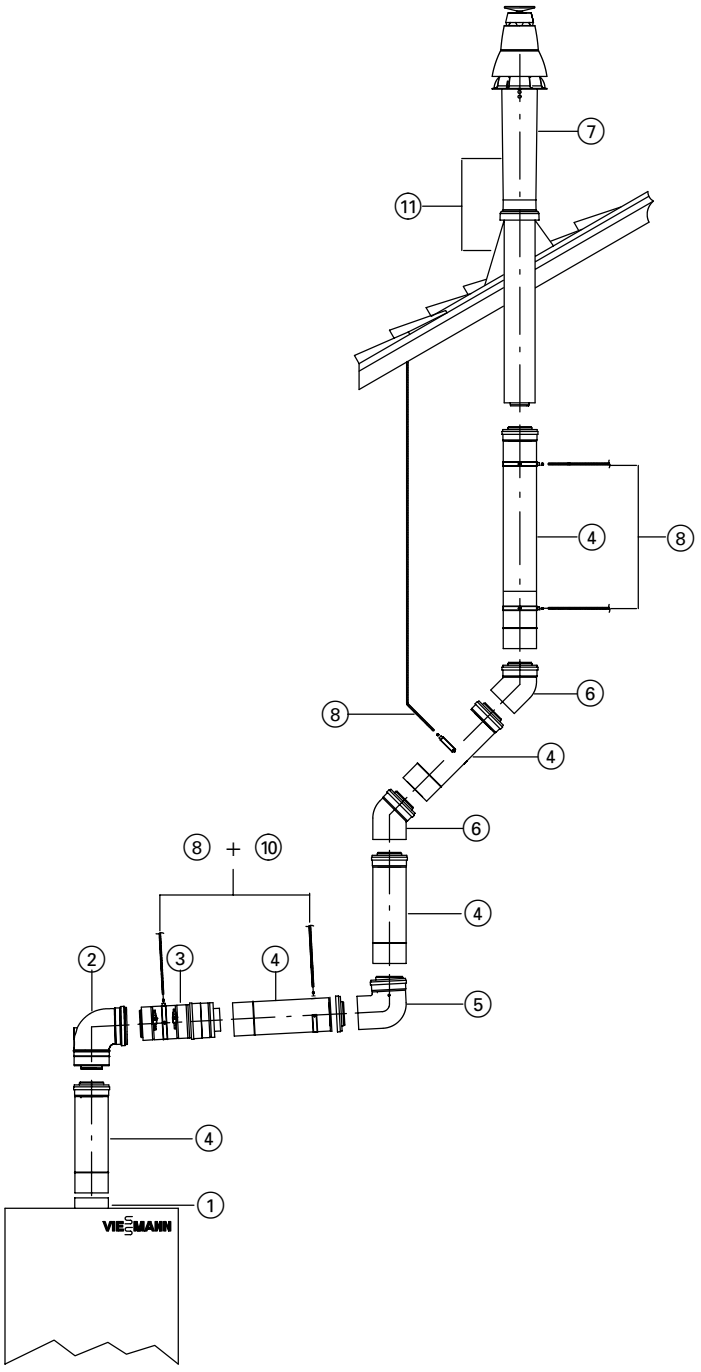

Fig. 16 General vertical venting layout for vent systems 60/100, 80/125 and 100/150

①	**Vent pipe adaptor**
②	**Elbow,** 87° (1 per carton)
③	**Telescopic extension**
④	**Straight pipe** 3.3 ft./1 m or 1.6 ft./0.5 m
⑤	**Elbow,** 87° (1 per carton)
⑥	**Elbow,** 45° (2 per carton)
⑦	**Vent termination**
	IMPORTANT **Never shorten vertical vent termination.**
⑧	**Mounting clip** (c/w 4" screw)
⑨	**Wall band** (c/w vent termination)
⑩	**Brass adaptor** (c/w set of screws)
⑪	**Roof flashing and storm collar** (field supplied)

Use other anchoring/support system components as required.
See page 30 for details.

IMPORTANT

Ensure that the venting system is properly supported; the Vitodens 100-W and 200-W boilers are not designed to support the weight of the venting system.

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Vertical Venting Layouts (Coaxial) *(continued)*

General installation examples

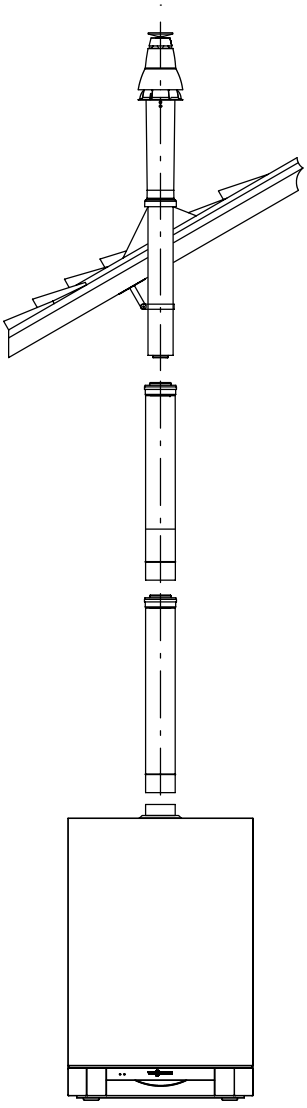


Fig. 17 Sloped roof installation

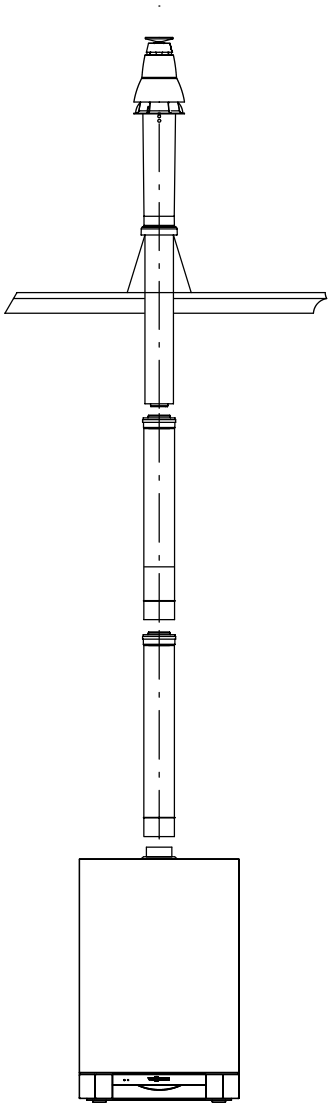


Fig. 18 Flat roof installation

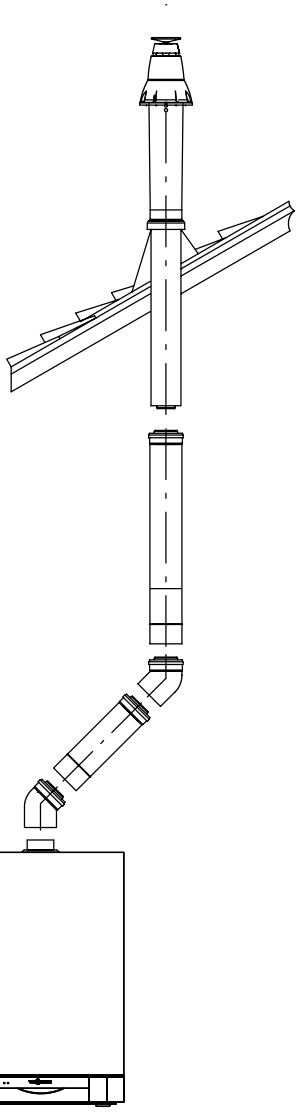


Fig. 19 Sloped roof installation with offset

IMPORTANT

Ensure that the venting system is properly supported; the Vitodens 100-W and Vitodens 200-W boilers are not designed to support the weight of the venting system.

Component Installation Guide

Offset installation

(e.g. for offset venting systems)
(2 × 45° elbow)

Minimum offset of approx. 4"/100 mm:
Slide two 45° elbows together
and connect to coaxial vent-air intake system.
(vent system 80/125)

When the offset is larger than 4"/100 mm:
Depending on the offset, insert extension straight pipe (Ⓑ) between the two 45° elbows.
(vent system 80/125)

Minimum offset of approx. 5"/120 mm:
Slide two 45° elbows together
and connect to coaxial vent-air intake system.

When the offset is larger than 5"/120 mm:
Depending on the offset, insert extension straight pipe (Ⓑ) between the two 45° elbows.
(vent system 100/150)

Table 11. Vent system 60/100

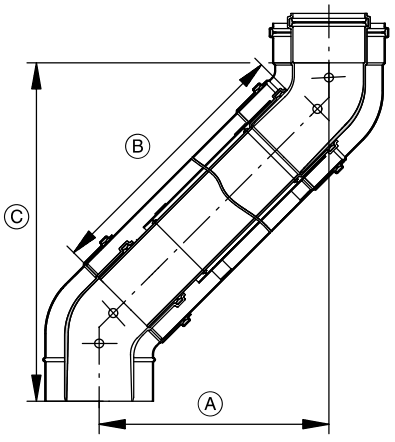
Offset (in./mm)	Ⓐ	6/ 150	8/ 200	9.8/ 250	12/ 300	13.7/ 350	15.3/ 390
Extension (in./mm)	Ⓑ	6.3/ 161	9.1/ 232	11.9/ 303	14.7/ 373	17.5/ 444	19.7/ 501
Height (in./mm)	Ⓒ	9.8/ 249	11.8/ 299	13.7/ 349	15.7/ 399	17.7/ 449	19.3/ 489

Table 12. Vent system 100/150

Offset (in./mm)	Ⓐ	8/ 200	9.8/ 250	12/ 300	13.7/ 350	15.3/ 390
Extension (in./mm)	Ⓑ	6.7/ 170	8.5/ 215	11.2/ 285	14/ 355	16.1/ 410
Height (in./mm)	Ⓒ	12.6/ 320	14.2/ 360	16.1/ 410	18.1/ 460	19.7/ 500

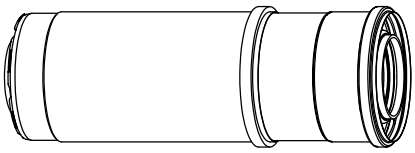
Table 13. Vent system 80/125

Offset (in./mm)	Ⓐ	6/ 150	8/ 200	9.8/ 250	12/ 300	13.7/ 350	15.3/ 390
Extension (in./mm)	Ⓑ	5/ 122	7.6/ 193	10.4/ 264	15.1/ 384	16/ 405	19.7/ 500
Height (in./mm)	Ⓒ	10.6/ 270	13/ 330	15/ 380	17/ 430	19/ 480	21.5/ 547



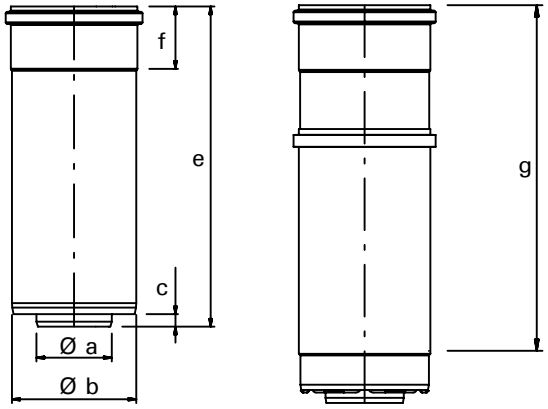
Component Installation Guide *(continued)*

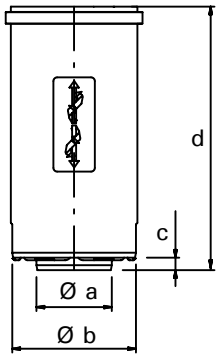
Coaxial vent telescopic extension installation



The telescopic extension is used where minor cutting or adjustment to the length of the vent pipe is required. See dimension “g” in table below.

Fig. 20 Coaxial vent telescopic extension





Boiler model	a in / mm	b in / mm	c in / mm	d in / mm	e in / mm	f in / mm	g in / mm
WB1B 26, 35 WB2B 9-19; 9-26, 9-35	2.4 / 60	4 / 100	0.4 / 10	7.9 / 200	9.6 / 245	1.2 / 30	min. 10.4 / 265 max. 16 / 405
17-45; 17-60	3.1 / 80	5 / 125	0.4 / 10	7.9 / 200	9.6 / 245	1.2 / 30	min. 11/ 280 max. 15.5 / 395
30-80; 30-150	4 / 100	6 / 150	0.4 / 10	7.9 / 200	9.6 / 245	1.2 / 30	min. 11/ 280 max. 15.5 / 395

Component Installation Guide *(continued)*

Coaxial vent termination installation

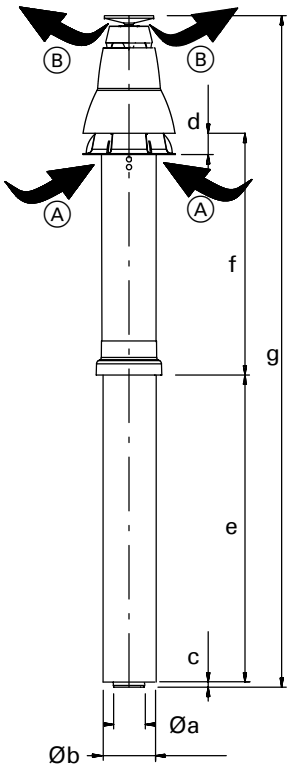


Fig. 21 Coaxial vent termination

Ⓐ Combust air intake
Ⓑ Flu gas outlet

Table 14. Ceiling opening information

Vent system	Opening Ø
60/100	4¼"/108 mm
80/125	5¼"/133 mm
100/150	$6^{3}/_{8}$"/160 mm

Vertical vent termination installation

IMPORTANT

The vertical vent termination must not be shortened outside the roof, otherwise the overall length will be shorter than required.

1. Install the vent termination for sloped or flat roof collars in accordance with the manufacturer's instructions.
2. The vent termination should be placed from above on the sloped or flat roof collar.
3. Connect vent pipe from below.

Dimensions vent system

Boiler model	a (in / mm)	b (in / mm)	c (in / mm)	d (in / mm)	e (in / mm)	f (in / mm)	g (in / mm)
WB1B 26, 35 WB2B 9-19; 9-26, 9-35	2.4 / 60	4 / 100	0.4 / 10	1.6 / 40	23 / 585	18.1 / 460	50.4 / 1280
17-45, 17-60	3 / 80	5 / 125	0.4 / 10	2.2 / 57	18.7 / 476	22.8 / 580	53.3 / 1354
30-80, 30-105	4 / 100	6 / 150	0.4 / 10	2.6 / 67	31.3 / 795	22.8 / 580	68.3 / 1735

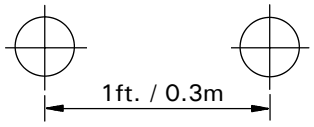
Component Installation Guide *(continued)*

Flashing and storm collar installation

Flashings and storm collars are field supplied. ***Flashings and storm collars suitable for Type B vent materials (or better) may be used.*** *To obtain flashings and storm collars, please contact your local vent material supplier. Follow the installation instructions supplied by the manufacturer.*

Vent termination location requirements

The vent must be installed observing local regulations in addition to National Codes, CAN/CSA-B149.1 or 2 (for installations in Canada) or ANSI-Z223.1 or NFPA 54 (for installations in the U.S.A.).
The distance between two adjacent vertical vent terminations for all boiler sizes is 1ft. / 0.3m (center to center).



See table 15. for the following two conditions.
- For sloped roof applications with distance b greater than 18″/450 mm
- For flat roof applications

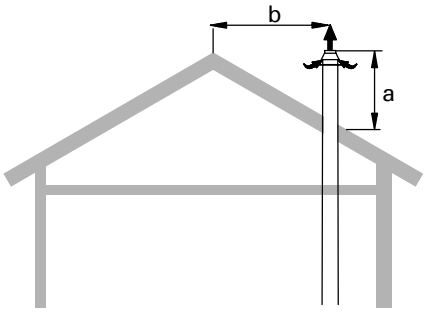


Fig. 22

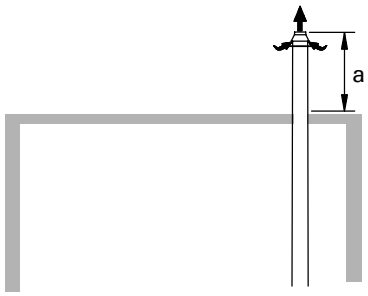


Fig. 23

Table 15.

Vent system	a (min. distance)
60/100	25″ / 635 mm *1
80/125	25″ / 635 mm *1
100/150	30″ / 762 mm *1

*(*See *dimensions on page 28).*

**1See WARNING below.*

⚠ WARNING

Vent termination must be at least 12″/300 mm above the anticipated snow level (consult your local building authorities or local weather office). Locate vent termination in such a way that it cannot be blocked by snow.

- For sloped roof applications with distance b less than 18″/450 mm

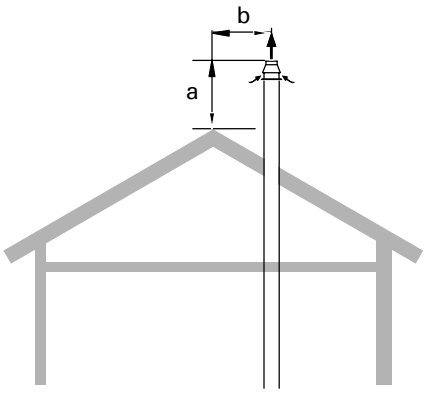


Fig. 24

a minimum 18″/450 mm
b <18″/450 mm

A vent used in a special venting system with positive vent pressure and passing through a roof shall extend at least 18″/450 mm above the highest point where it passes through the roof and any other obstruction within a horizontal distance of 18″/450 mm.

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Installation of Support System

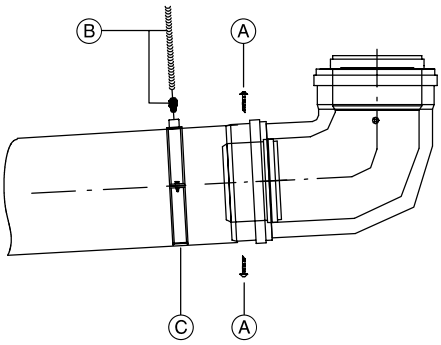


Fig. 25

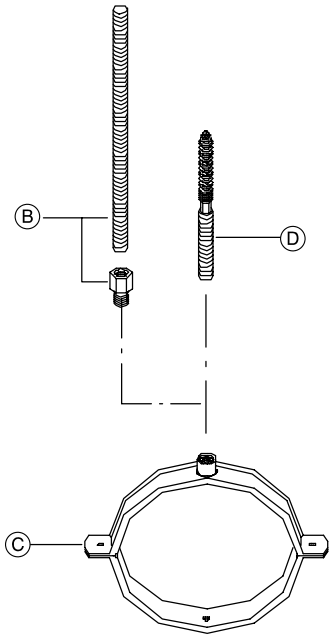


Fig. 26

The venting system must be securely supported by a support system suitable for the weight and design of the materials employed.
Contact your vent material supplier for more information specific to your installation.

Supports

Supports are used to transfer the weight of an installation to the building structure. There are different types of supports and their capacity varies with each type and diameter.
The following support types are available at your local vent material supplier...
- anchor plate
- wall support
- roof support
- floor support
- suspension band (hanger).

In addition to the support types listed above Viessmann offers mounting clips (see Ⓒ fig. 25 and fig. 26) which can be used in conjunction with the above support types to support the weight of the venting system. Please contact Viessmann to order.

Vertical vent systems with horizontal sections must have the joints in these sections secured with supplied sheet metal screws Ⓐ (see fig. 25) to prevent the system from sagging.

The 4"/101.6 mm screws Ⓓ supplied with the mounting clip provide wall or ceiling support for a
- minimum distance of 2"/50.8 mm
- maximum distance of 3¼"/82.5 mm (see fig. 26).

If a longer support system is required use brass adaptors M8 x $^{5}/_{16}$" (supplied) with $^{5}/_{16}$" all-threaded rods Ⓑ (field supplied) (see fig. 26).

Bracing

Contact your local vent material supplier for more information specific to your installation.

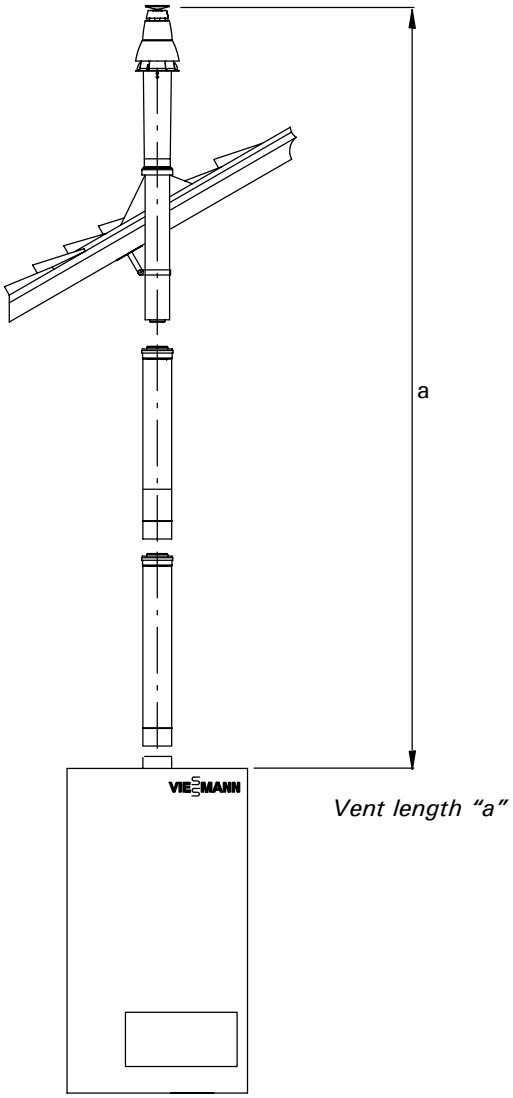
Braces are required to stabilize an installation. There are different types and their use and spacing vary.
The following types of braces are available at your local vent material supplier...
- wall band
- wall band extension
- guy wire band
- roof brace.

IMPORTANT

Ensure that the venting system is properly supported; the Vitodens 100-W boiler is not designed to support the weight of the venting system.

Vent Length Requirements

Maximum vent length



Vent length "a"

Fig. 27

Table 16.

Boiler model		WB1B 10-26 10-35	WB2B 9-19 9-26	WB2B 9-35	WB2B 17-45	WB2B 17-60	WB2B 30-80 30-105
a (max. length)							
60/100 vent system	ft./m	82/25	30/9	23/7	---	---	---
80/125 vent system	ft./m	---	---	---	33/10	20/6	---
100/150 vent system	ft./m	---	---	---	---	---	43/13

Do not exceed the maximum vent length.

See page 32 for increased diameter equivalent vent pipe system (see table 17 and 18).

Vent Length Requirements *(continued)*

Maximum vent length with increasers

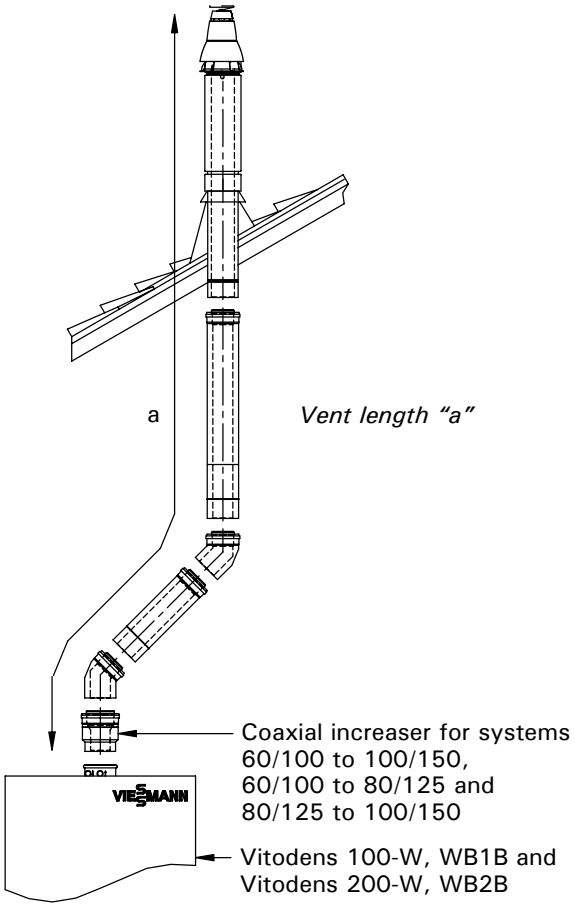


Fig. 28

Table 17. Maximum vent length for vertical installations (Vitodens 100-W)

Model No.		WB1B 10-26, 10-35	
System vent size		80/125 *1	100/150 *2
Max. vent length *"a"*	ft. m	98 30	118 36

*1 *If used with increasers 60/100 to 80/125.*
*2 *If used with increasers 60/100 to 100/150*

Table 18. Maximum vent length for vertical installations (Vitodens 200-W)

Model No.		WB2B 9-19, 9-26		WB2B 9-35		WB2B 17-45	WB2B 17-60
System vent size		80/125 *1	100/150 *2	80/125 *1	100/150 *2	100/150 *3	100/150 *3
Max. vent length *"a"*	ft. m	39.4 12	52 16	34 10.5	49 15	43 13	33 10

*1 *If used with increasers 60/100 to 80/125.*
*2 *If used with increasers 60/100 to 100/150*
*3 *If used with increasers 80/125 to 100/150*

Ⓐ 87° elbow
Ⓑ Vent pipe (3.3 ft./1 m)
Ⓒ Vent pipe (1.6 ft./0.5 m)
Ⓓ Vent termination

Minimum vent length

The minimum equivalent vertical vent length for all models is 4 ft./1.2 m (=length of vent termination).

Vent Length Requirements *(continued)*

Equivalent vent calculation examples

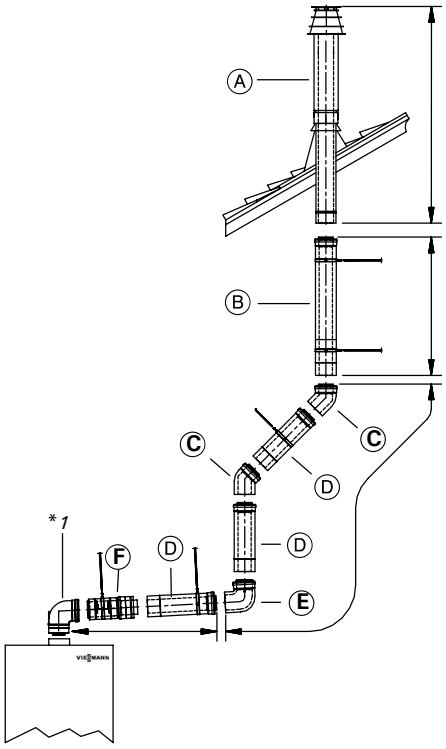


Fig. 29 Equivalent vent length calculation, example

Ⓐ Vent termination
Ⓑ Vent pipe (3.3 ft./1 m)
Ⓒ 45° elbow
Ⓓ Vent pipe (1.6 ft./0.5 m)
Ⓔ 87° elbow
Ⓕ Telescopic extension

*1 *First elbow not included in equivalent vent calculation.*

Table 19.

Type of fitting	Equivalent length
87° elbow/ 87° inspection tee	1.6 ft./0.5 m
45° elbow	1 ft./0.3 m

IMPORTANT

Always include vent termination length in calculations.

Equivalent vent length calculation example

Vitodens 100-W, WB1B 10-35
and Vitodens 200-W, WB2B 9-35
(vent system 60/100) (Fig. 29)

2 x 87° elbow ..... 3.3 ft./1 m
2 x 45° elbow ..... 2 ft./0.6 m
3 x vent pipe (0.5 m) ..... 4.8 ft./1.5 m
1 x vent pipe (1 m) ..... 3.3 ft./1 m
1 x telescopic extension (average length) ..... 1.0 ft./0.31 m
1 x vent termination ..... 4.2 ft./1.28 m
Total equivalent length 18.6 ft./5.67 m

Table 20. Standard sizes of boiler flue gas vent adaptors

Boiler model	Adaptor size
WB1B 10-26	60/100
WB1B 10-35	60/100
WB2B 9-19	60/100
WB2B 9-26	60/100
WB2B 9-35	60/100
WB2B 17-45	80/125
WB2B 17-60	80/125
WB2B 30-80	100/150
WB2B 30-105	100/150

Component Parts of the Venting System

Straight pipe (0.5 m)
(can be cut to length if required)

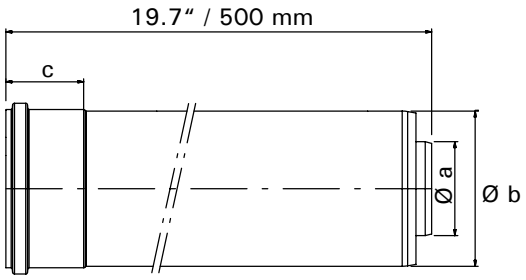


Table 21.

Vent system size	Dimensions [in./mm]		
	a	**b**	**c**
60/100	2.4/60	4/100	1.6/50
80/125	3/80	5/125	1.6/50
100/150	4/100	6/150	1.6/50

IMPORTANT

When cutting straight pipes to length, debur and clean pipes.

Straight pipe (1 m)
(can be cut to length if required)

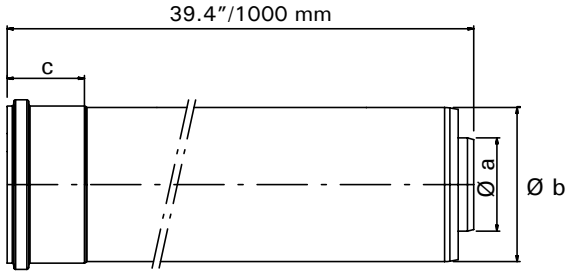


Table 22.

Vent system size	Dimensions [in./mm]		
	a	**b**	**c**
60/100	2.4/60	4/100	1.6/50
80/125	3/80	5/125	1.6/50
100/150	4/100	6/150	1.6/50

IMPORTANT

When cutting straight pipes to length, debur and clean pipes.

Elbow (87°)

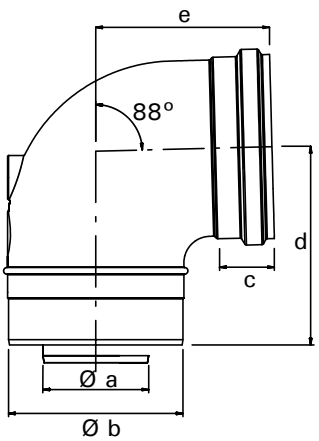


Table 23.

Vent system size	Dimensions [in./mm]				
	a	**b**	**c**	**d**	**e**
60/100	2.4/60	4/100	1.2/31	4.5/113	4/100
80/125	3/80	5/125	1.2/31	5/128	4.3/110
100/150	4/100	6/150	1.2/31	5.2/133	4.5/115

Component Parts of the Venting System *(continued)*

Elbow (45°) (2 per carton)

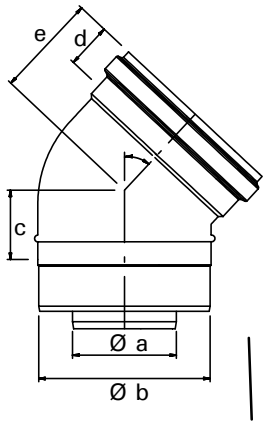


Table 24.

Vent system size	Dimensions [in./mm]				
	a	**b**	**c**	**d**	**e**
60/100	2.4/60	4/100	1.6/40	1.2/30	2.4/60
80/125	3/80	5/125	1.8/45	1.2/30	2.5/63
100/150	4.3/110	6/100	3.8/97	1.2/30	5/128

Increaser

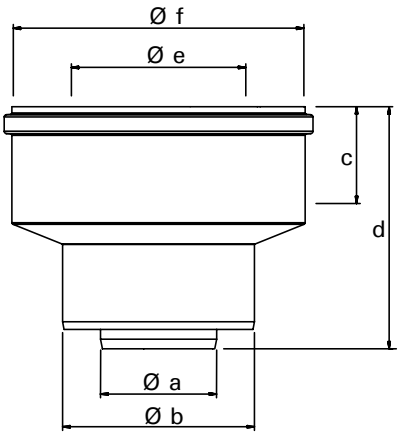


Table 25.

Vent system size	Dimensions [in./mm]					
	a	**b**	**c**	**d**	**e**	**f**
60/100	2.4/60	4/100	2/50	5/125	4/100	6/150
80/125	3.1/80	5/125	2/50	4.3/110	4/100	6/150
100/150	2.4/60	6/150	2/50	4.3/110	3.1/80	5/125

Telescopic extension

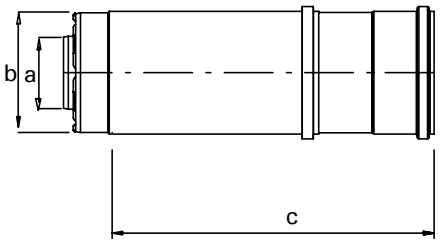


Table 26.

Vent system size	Dimensions [in./mm]		
	a	**b**	**c**
60/100	2.4/60	4/100	min. 10.4/265 max. 16/405
80/125	3.1/80	5/125	min. 11/280 max. 15.5/395
100/150	2.4/60	6/150	min. 11/280 max. 15.5/395

Wall Flashing

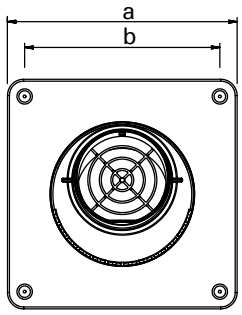
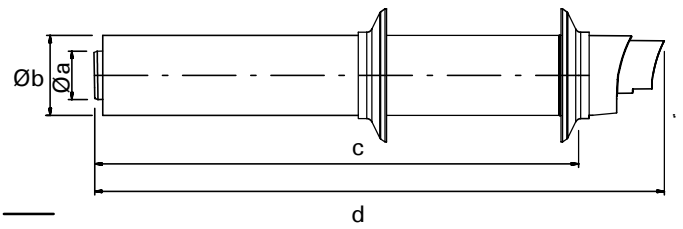


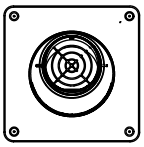
Table 27.

Vent system size	Dimensions [in./mm]	
	a	**b**
60/100	4/102	7.6/194
80/125	5/125	9/230
100/150	6/150	9/230

Component Parts of the Venting System *(continued)*

Horizontal vent termination





front view,
not to scale

IMPORTANT

Total length of vent termination pipe is 31"/787 mm. If required, the vent termination pipe may be shortened by max. 12"/305 mm (min. vent termination length is 19"/483 mm).

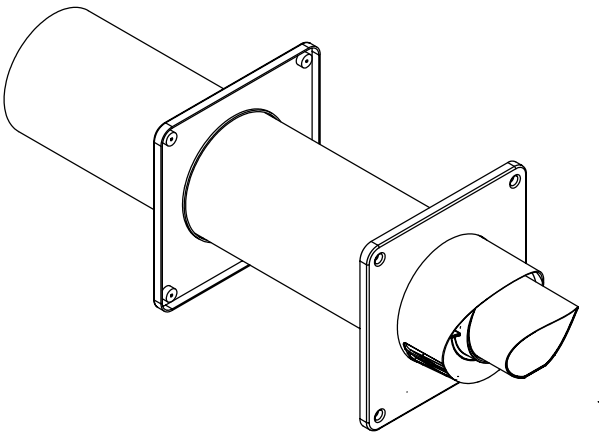
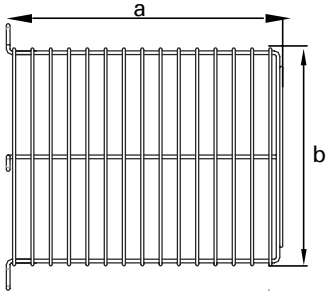


Table 28.

Vent system size	Dimensions [in./mm]			
	a	**b**	**c**	**d**
60/100	2.4/60	4/100	23.6/600	27.8/705
80/125	3/80	5/125	23.6/600	29/735
100/150	4/100	6/150	23.6/600	30.8/738

Protective screen
for side wall venting installations only



Dimensions

a 12" / 405mm
b 9.5" / 241mm

Transition 110 > 150

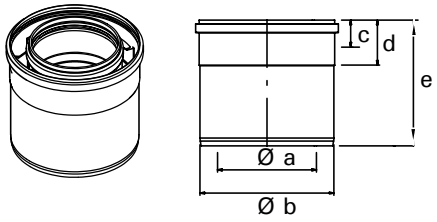


Table 29.

Boiler model	Dimensions [in./mm]				
	a	**b**	**c**	**d**	**e**
WB2B 30-80 30-105	4.3/110	6/150	1.3/40	2/50	5.5/140

5368 815 v2.0 b

Component Parts of the Venting System *(continued)*

Vertical vent termination

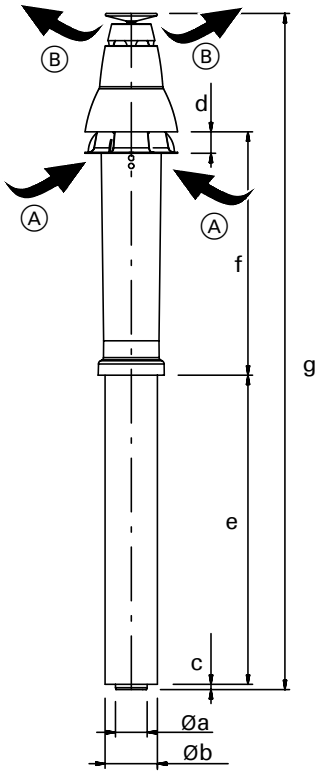
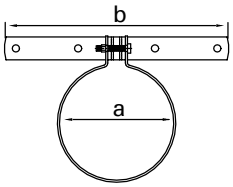


Fig. 30 Coaxial vent termination

Wall band
for installation on inside wall or ceiling (c/w vertical vent termination)



Ⓐ Combust air intake
Ⓑ Flu gas outlet

Table 30.

Vent system size	Dimensions [in./mm]	
	a	**b**
60/100	4/100 4/100	8.5/215 8.5/215
80/125	4.3/110	8.5/215
100/150	6/150	8.5/215

Mounting clip, white
for installation on inside wall or ceiling

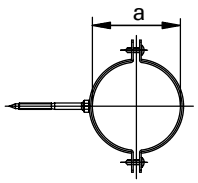
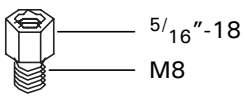


Table 31.

Vent system size	Dimensions [in./mm]
	a
60/100	4/100 4/100
80/125	5/125
100/150	6/150

Brass adaptor
(c/w set of 20 #8 x $^{3}/_{8}$" screws)



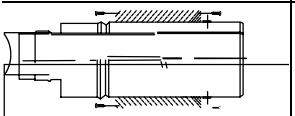
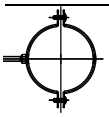
Dimensions vent system

Boiler model	a (in / mm)	b (in / mm)	c (in / mm)	d (in / mm)	e (in / mm)	f (in / mm)	g (in / mm)
WB1B 26, 35 WB2B 9-19; 9-26, 9-35	2.4 / 60	4 / 100	0.4 / 10	1.6 / 40	23 / 585	18.1 / 460	50.4 / 1280
17-45, 17-60	3 / 80	5 / 125	0.4 / 10	2.2 / 57	18.7 / 476	22.8 / 580	53.3 / 1354
30-80, 30-105	4 / 100	6 / 150	0.4 / 10	2.6 / 67	31.3 / 795	22.8 / 580	68.3 / 1735

Component Parts of the Venting System *(continued)*

Basic vent kit components *(Side Wall Vent System only)*

For replacement purposes or project-specific requirements, individual parts can be ordered from Viessmann. Refer to the table for an outline of basic vent kit componentry that can be ordered separately.

	Basic components
	**Vent pipe adaptor** (comes pre-installed on all models)
	**Elbow,** 87°
	**Straight pipe,** 3.3 ft./1 m *1
	**Vent termination** (c/w wall flashings)
	**Protective screen** (c/w brass adaptor and set of screws)
	**Mounting clip** *2
	**Brass adaptor** (c/w set of 20 #8 x $^{3}/_{8}$" screws)

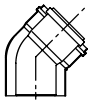
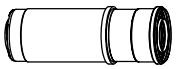
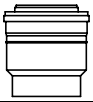
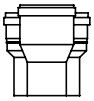
*1 *When ordering the straight pipe separately, order with mounting clip and brass adaptor.*

*2 *When ordering mounting clip separately, order with brass adaptor.*

Component Parts of the Venting System *(continued)*

Vent accessories

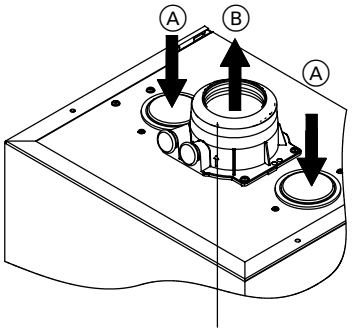
For project-specific requirements, individual accessory parts can be ordered from Viessmann. Refer to the table for an outline of accessory parts available.

	Accessory components
	**Straight pipe,** 1.6 ft./0.5 m *[1]
	**Elbow (45°)** (2 per carton)
	**Telescopic extension**
	**Coaxial increaser for system 60/100 to 80/125**
	**Coaxial increaser for system 80/125 to 100/150**
	**Coaxial increaser for system 60/100 to 100/150**
Joint lubricant	

[1] When ordering the straight pipe separately, order with mounting clip and brass adaptor.

Direct Venting Options (Two-pipe System)

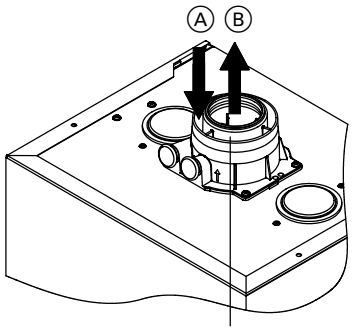
Boiler models Vitodens 100-W WB1B 10-26/30 and Vitodens 200-W WB2B 9-19/26/35



For double-pipe installation, the combustion air inlet cover must be in place.

Fig. 31 Single or double pipe installation

Ⓐ Combustion air (requires 2″ CPVC adaptor)
Ⓑ Flue gas (requires 2″ CPVC adaptor)



Remove and discard combustion air inlet cover when installing coaxial vent pipe system.

Fig. 32 Coaxial vent pipe system

Coaxial vent pipe system
Ⓐ Combustion air
Ⓑ Flue gas

As opposed to coaxial venting systems, the two-pipe venting system draws combustion air Ⓐ through a separate air intake pipe from the outdoors. Flue gases Ⓑ are discharged to the outdoors via the single-wall pipe of the special venting system. The two-pipe system is flexible in the selection of materials offered by different manufacturers and the location of the vent/air intake termination.

Read the following exhaust vent/air intake requirements carefully before commencing with the installation.

Boiler models Vitodens 200-W WB2B 17-45/60 and WB2B 30-80/105

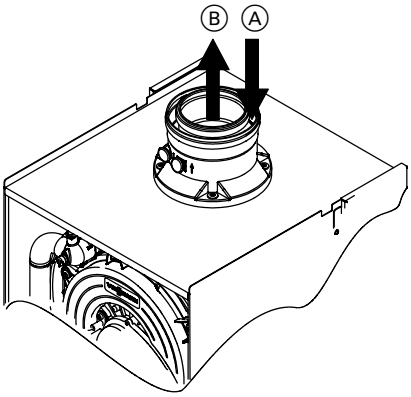


Fig. 33 Coaxial vent pipe system

Ⓐ Combustion air
Ⓑ Flue gas

Exhaust Vent/Air Intake Requirements

Combustion air supply

The Vitodens boiler is suitable for sidewall, as well as vertical venting using field supplied venting material. The Vitodens 100-W and 200-W boilers are approved for both direct vent (sealed combustion), as well as direct exhaust (non-sealed combustion) operation in both horizontal and vertical arrangements. For non-sealed combustion vent systems (i.e. room-air dependent), see appropriate section under "Single Wall Venting" starting on page 64 in this manual.

The boiler must be connected to a direct vent system in which all air for combustion is taken from the outside atmosphere and all combustion products are discharged safely to the outdoors.

The boiler must be vented and supplied with combustion air and exhaust vent as described in this section. Ensure the vent and combustion air supply comply with these instructions.

Inspect all finished exhaust vent/air intake piping to ensure:

- Vent/air intake pipe and fittings are of approved material.
- Acceptable size, length and number of elbows on combined vent/air intake system.
- Installation is in accordance with prevailing provisions of local codes.
- Installation complies with the requirements of these instructions, as well as the exhaust vent/air intake supplier's instructions.

The exhaust vent and combustion air intake system and terminations may be installed in one of the following type terminations (2-pipe system):

1. Horizontal air intake and exhaust vent pipes
2. Vertical air intake and exhaust vent pipes
3. Horizontal air intake pipe and vertical exhaust vent pipe

⚠ CAUTION

Do not locate boiler in areas where high dust levels or high humidity levels are present.

⚠ CAUTION*

Do not install boiler during construction involving drywall or heavy dust of any kind. Dust can accumulate in the burners and cause sooting. Install boiler after all heavy dust construction is completed.

* Typically when the boiler is used as a temporary heat source during the building construction phase.

⚠ CAUTION

If the boiler has been exposed to high dust levels, all burners and the heat exchanger must be cleaned prior to use.

⚠ CAUTION

If above criteria are not properly observed and boiler damage results, any warranty on the complete boiler and related components will be null and void.

Exhaust Vent/Air Intake Requirements *(continued)*

General requirements

The Vitodens 100-W and 200-W boilers must be located in such a way that the vent length is as short as possible and that the vent can be routed as directly (and with as few bends) as possible.
The minimum equivalent vent length is 4 ft. / 1.2 m.
See tables NO TAG, 40. and 41. for maximum and minimum vent lengths.

All products of combustion must be safely vented to the outdoors.
The Vitodens boiler is not approved for common-venting applications. Do not common-vent with any other appliance.
The Vitodens boiler vents under positive pressure and is a Category IV boiler.

⚠ WARNING

Failure to ensure that all flue gases have been safely vented to the outdoors can cause property damage, severe personal injury, or loss of life. Flue gases may contain deadly carbon monoxide.

Viessmann recommends that the entire vent system be checked by a licensed professional heating contractor at least once each year following initial installation.

The stainless steel special venting system is completely sealed when fully assembled. Locking bands are used to reinforce the joints between pipe and fittings.

⚠ WARNING

Different manufacturers offer a number of different joint systems and adhesives. Do not mix pipes, fittings and/or joining methods from different manufacturers. Failure to comply could result in leakage, potentially causing personal injury or death.

Do not install vent pipe in a way that flue gases flow downwards. The direction of flue gas flow must be vertically upwards or horizontal with an upward slope.

Ensure there is no flue gas leakage into the area in which the boiler is installed.

Check joints for leaks with the gas supply turned off and the fan running. Use a soapy solution to check for vent leaks.

Condensate must drain from the flue pipe to the boiler. Ensure a suitable gradient of at least 3° (approx. 2″ per 3.3 ft. / 50 mm per 1 m).
No condensate trap is required in the vent pipe system.

General Installation Information

Installation steps (outline)

Exhaust and combustion air piping material

Use only the materials listed in table 32. entitled "Approved materials for two-pipe system" on page 44 for exhaust, combustion air intake pipe and fittings.

- Cut the pipe end square and remove all burrs and debris from joints and fittings.
- If using CPVC special vent material for exhaust vent pipe and ABS/PVC/CPVC for combustion air intake pipe, all joints must be properly cleaned, primed and cemented. Use only cement and primer approved for the use with the pipe material. See table 32. entitled "Approved materials for two-pipe system" on page 44 for approved solvent cement material.

⚠ CAUTION

For solvent cement and primer:
- **Use only in well ventilated areas**
- **Do not use near flame or open fire**
- **Use only the solvent cement and primer appropriate for the venting material being used**
- **Solvent cements for plastic pipe are flammable liquids and must be kept away from all sources of ignition**

- No low point is allowed in the exhaust vent pipe system, unless a proper drain pipe is used to allow condensate to drain.

⚠ WARNING

Ensure that the entire venting system is protected from physical damage. A damaged venting system may cause unsafe conditions.

⚠ WARNING

The venting system is approved for indoor installations only.
Do not install the venting system outdoors.

- Route vent pipe as directly as possible and with as few bends as possible to the boiler.
- Condensate must drain from the flue pipe to the boiler. Ensure a suitable gradient of at least 3° (approx. 2" per 3.3 ft. / 50 mm per 1 m).
- Use a hacksaw and sheet metal snips to cut pipes to length (if necessary). Use a file to smooth rough edges. Pipe must be round and not bent into an oval shape.

IMPORTANT

When cutting pipes to length, debur and clean pipes.

In conjunction with these instructions, follow the installation instructions supplied by the special venting manufacturer.
Viessmann Venting System Instructions supersede the instructions supplied by the manufacturer.

- All piping must be fully supported. Use pipe hangers at a minimum of 48" / 1219 mm intervals to prevent sagging of the pipe.
- The exhaust vent/air intake pipe and fittings must be securely supported by a support system suitable for the weight and design of the material employed. Contact your local vent material supplier for more information specific to your installation(s).

IMPORTANT

Ensure that the exhaust vent/air intake pipes are properly supported. The Vitodens boiler is not designed to support the weight of the exhaust vent/air intake pipe system.

- Field supplied increaser fittings (transition) should always be inserted in vertical sections of pipe to prevent accumulation of condensate in the vent pipe.
- The total equivalent length specified for a two-pipe system is the total of the **combined** length of the exhaust vent/air intake pipe system. Do not exceed these maximum lenghts.
- A maximum of five 90° elbows may be installed in **combined** length of the exhaust vent/air intake pipe system (excluding termination elbows, tees, hoods and couplings).

General Installation Information *(continued)*

Installation steps (outline) *(continued)*

Table 32. Approved materials for two-pipe system

Part	Material	Certified to Standards	Applicability
Exhaust pipe and fitting	Stainless steel	UL1738 "Venting systems for gas-burning appliances, Categories II, III, IV"	U.S.A.
		ULC S636 "Standard for Type BH gas venting systems"	Canada
	CPVC	UL1738 "Venting systems for gas-burning appliances, Categories II, III, IV"	U.S.A.
		ULC S636 "Standard for Type BH gas venting systems"	Canada
Combustion air pipe and fitting	Stainless steel	n.a.	n.a.
	PVC-DWV Schedule 40	ANSI/ASTM D2661 CSA B181.1 ULC S102.2 ANSI/ASTM D2665, D1785 CSA B137.3, B181.2 ANSI/ASTM F441	U.S.A./Canada
	CPVC Schedule 40	ANSI/ASTM D2661 CSA B181.1 ULC S102.2 ANSI/ASTM D2665, D1785 CSA B137.3, B181.2 ANSI/ASTM F441	U.S.A./Canada
	ABS-DWV Schedule 40	ANSI/ASTM D2661 CSA B181.1 ULC S102.2 ANSI/ASTM D2665, D1785 CSA B137.3, B181.2 ANSI/ASTM F441	U.S.A./Canada
Pipe cement, primer (for combustion air intake pipe)	PVC	ANSI/ASTM D2564 CSA B137.3	U.S.A./Canada
	CPVC	ANSI/ASTM F493 CSA B137.6	
	ABS	ANSI/ASTM D2235 CSA B181.1/B182.1	
Pipe cement, primer (for exhaust pipe and fitting)	CPVC	ULC S636 "Standard for Type BH gas venting systems" Class IIB 90°C	U.S.A./Canada

⚠ CAUTION

Do not use cellular (foam) core pipe material to vent this Vitodens boiler.

⚠ CAUTION

On the job site, ensure that non-listed combustion air pipe materials are not inadvertently used instead of listed vent pipe material.

General Installation Information *(continued)*

Vent termination location requirements (for installations in Canada)

The vent must be installed observing local regulations in addition to National Codes, CAN/CSA-B149.1 or 2.
A vent must **NOT** terminate...

1. ....directly above a paved sidewalk or paved driveway which is located between two single-family dwellings and serves both dwellings.

2. ....less than 7 ft./2.13 m above a paved sidewalk or a paved driveway located on public property.

3. ....within 6 ft./1.83 m of a mechanical air supply inlet *1 to any building (dryer vents, non-sealed combustion furnace and hot water heater vents are considered to be mechanical air inlets).

4. ....above a meter/regulator assembly within 3 ft./0.9 m horizontally of the vertical centerline of the regulator vent outlet and to a maximum vertical distance of 15 ft./4.5 m.

5. ....within 3 ft./0.9 m of any gas service regulator vent outlet.

*1 *Including heat recovery units.*

6. ....less than 1 ft./0.3 m above grade level or anticipated snow level (consult local building authorities or local weather office). Locate the vent termination in such a way that it cannot be blocked by snow.

7. ....within the following distances of a window or door which can be opened in any building, any non-mechanical air supply inlet to any building or the combustion air inlet of any other appliance:

- 1 ft./0.3 m for inputs up to and including 100 000 Btu/h/30 kW (applicable only to boiler model WB1B 10-26).
- 3 ft./0.9 m for input exceeding 100 000 Btu/h/30 kW (applicable to boiler model WB1B 10-35).

8. ....underneath a veranda, porch or deck, unless

- the veranda, porch, or deck is fully open on a minimum of two sides beneath the floor, and
- the distance between the top of the vent termination and the underside of the veranda, porch, or deck is greater than 1 ft./0.3 m.

9. ....in areas where condensation may cause problems, such as above planters, patios, or adjacent to windows where flue gases may cause fogging.

10. ....within 3 ft./0.9 m to the property line (advisable, not mandatory; please check with local building authorities and municipal bylaws).

11. ....at a location where ice formation on the ground can present a hazard.

12. ....so that the flue gases are directed toward brickwork, siding, or other construction, in such a manner that may cause damage from heat or condensate from the flue gases.

13. ....where discharging hot flue gases may cause property damage or personal injury.

14. ....within 3 ft./0.9 m from an inside corner of outside walls.

General Installation Information *(continued)*

Vent termination location requirements (for installations in the U.S.A.)

The vent must be installed observing local regulations in addition to National Codes, ANSI-Z223.1 or NFPA 54.
A vent must **NOT** terminate...

1. ....less than 7 ft./2.13 m above a paved sidewalk or a paved driveway located on public property.

2. ....within 4 ft./1.2 m horizontally from service regulator vents, electric and gas meters as well as relief equipment.

3. ....at least 3 ft./0.9 m above any forced air inlet located within 10 ft./ 3 m.

4. ....less than 1 ft./0.3 m above grade level or anticipated snow level (consult local building authorities or local weather office). Locate the vent termination in such a way that it cannot be blocked by snow.

5. ....within 1 ft./0.3 m of a window or door which can be opened in any building, any non-mechanical air supply inlet to any building or the combustion inlet of any other appliance.

6. ....in areas where condensation may cause problems, such as above planters, patios, or adjacent to windows where flue gases may cause fogging.

7. ....within 3 ft./0.9 m to the property line (advisable, not mandatory; please check with local building authorities and municipal bylaws).

8. ....at a location where ice formation on the ground can present a hazard.

9. ....so that the flue gases are directed toward brickwork, siding, or other construction, in such a manner that may cause damage from heat or condensate from the flue gases.

10. ....where discharging hot flue gases may cause property damage or personal injury.

11. ....within 3 ft./0.9 m from an inside corner of outside walls.

Flashing and storm collar installation

Flashings and storm collars are field supplied. **Flashings and storm collars suitable for Type B vent materials (or better) may be used.**

To obtain flashings and storm collars, please contact your local vent material supplier. Follow the installation instructions supplied by the special venting manufacturer.

Follow local codes to properly isolate the exhaust vent pipe when passing through floors, ceiling and roof.

Always check the marking on the pipe to make sure you are using the correct material.

Vent Requirements - Stainless Steel

Additional requirements for stainless steel vent pipe material

Use an AL29-4C® special stainless steel venting system (UL/ULC listed for category IV) for horizontal or vertical venting of the Vitodens boilers.
See tables 35 and 36, and contact one of the suppliers (see listing on right) to order.

Prior to installation, check that the correct single-wall vent parts were ordered and supplied.

See table 38 for special parallel/starter adaptor and bird screen models required for your installation. In case of discrepancies, contact original parts supplier.

Exhaust vent/air intake connection to boiler

The vent connection to the Vitodens boiler must be made with the starter stainless steel adaptor (supplied by others and/or parallel adaptor see table 38). The starter adaptors are intended for a slip fit and slide into the parallel adaptor with a gentle twisting motion.

Combustion air intake pipe:

If the venting system will use CPVC/ABS, PVC plastic pipe for combustion air intake, a CPVC starter adaptor for use on air intake connection to parallel adaptor must be ordered from Viessmann (see table 38.).
The bird screen for the air intake termination elbow must also be ordered from Viessmann.

Note:
The Vitodens boiler has passed the zero inches vent clearance to combustibles testing requirements dictated by the Harmonized Standard ANSI Z21.13. CSA 4.9.2005 and therefore is listed for zero clearance to combustibles when vented with a single wall special venting system (AL-29-4C material). The zero inches vent clearance to combustibles for the Vitodens boiler supersedes the clearance to combustibles listing that appears on the special venting system marking.

Flexmaster Canada Ltd.
452 Attwell Drive
Etobicoke, ON
M9W 5C3
Tel. (416) 679-0045

Z-FLEX (US) INC.
20 Commerce Park North
Bedford, NH
03110-691
Tel. (800) 654-5600

Heat-Fab, Inc.
130 Industrial Blvd.
Turners Falls, MA
01376
Tel. (800) 772-0739

ProTech Systems, Inc.
400 South Pearl Street
Albany, NY
12202
Tel. (800) 766-3473

Security Chimneys International Ltd.
2125 Rue Monterey
Laval, QC
H7L 3T6
Tel. (800) 363-0821

IMPORTANT

For exhaust vent pipe material:
Do not use any other vent material.
Do not use galvanized pipe, plastic pipe and/or chimney liners (rigid or flexible) of any kind.

⚠ WARNING

The use of vent material other than listed AL29-4C stainless steel, positive pressure vent pipe and fittings can cause property damage, severe personal injury and/or loss of life.

Vent Requirements - Stainless Steel *(continued)*

Additional requirements for stainless steel vent pipe material *(continued)*

Viessmann coaxial increaser and 2″ air intake CPVC adaptor must be ordered, (see table 33. for part number).
Minimum pipe diameter available for exhaust stainless steel pipe is 3″.
The air intake pipe of the increaser must be removed and discarded (See Fig. 34).
The air inlet (intake) cover must stay in place.

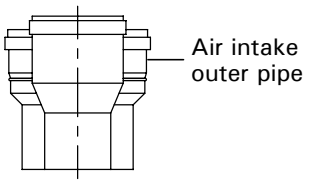
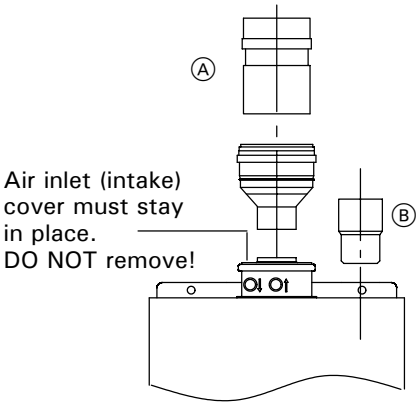


Fig. 34

Table 33. Coaxial increaser (min. stainless steel pipe diameter is 3″ / 76mm)

Supplier	Boiler Model	Coaxial increaser	CVPC Starter Adaptor for air intake	Qty.
Viessmann	■WB1B 10-26, 10-35 ■WB2B 9-19/26/35	(60>3″) (see Fig. 35)	2″	1

Vent pipe starter adaptors for WB1B 10-26, 10-35 and WB2B 9-19, 9-26, 9-35



⚠ WARNING

(For this type of installation only:) Boiler comes with pre-installed combustion air cover mounted on the concentric vent pipe adaptor. Do not remove combustion air intake cover. Removing this cover may cause unintended room air dependent operation (non-direct vent). Room air dependent operation requires provision of combustion and ventilation air (as per section "Single Wall Venting", p. 64.

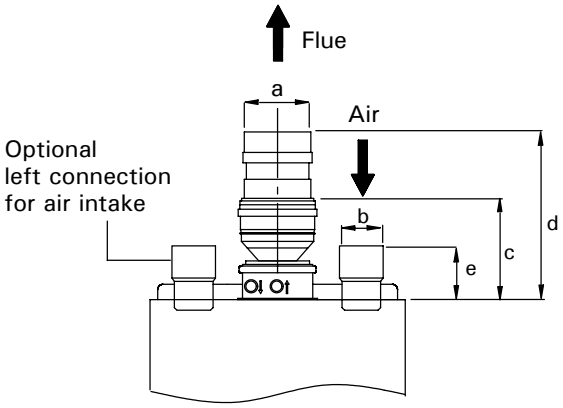


Fig. 35

Legend

Ⓐ Stainless steel slip joint vent starter adaptor
Ⓑ 2″ CVPC starter adaptor, ViPN 7134 769
a 3″ / 76 mm
b 2″ / 51 mm
c 6.25″ / 159mm
d 10.34″ / 263 mm
e 3″ / 76 mm

Vent Requirements - Stainless Steel *(continued)*

Additional requirements for stainless steel vent pipe material *(continued)*

Table 34. Parallel adaptor for two-pipe system

Supplier	Boiler Model	Ø inches/mm	Qty.
Viessmann	■WB2B 17-45, 17-60	3 / 80 (see fig. 36)	1
	■WB2B 30-80, 30-105	4 / 100 (see fig. 37)	1

Parallel vent pipe starter adaptors for WB2B 17-45, 17-60

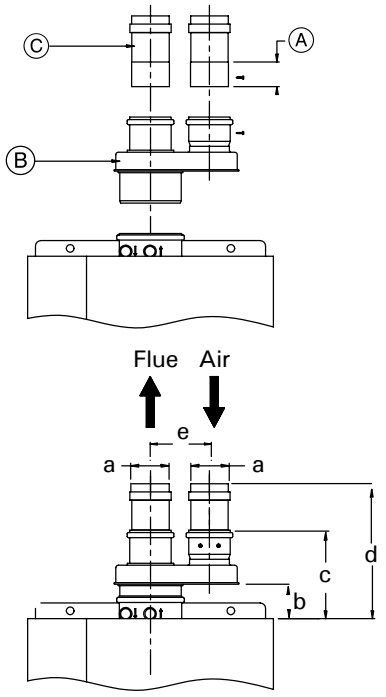


Fig. 36

Legend

Ⓐ Air intake, max. insertion 2½" / 64mm (use sheet metal screws to hold in place)
Ⓑ Viessmann parallel adaptor
Ⓒ Stainless steel slip joint vent starter adaptor
a 3" / 76mm
b 2¾" / 70mm
c 7" / 178mm
d approx. 10¾" / 271mm
e 4¾" / 120mm

Parallel vent pipe starter adaptors for WB2B 30-80, 30-105

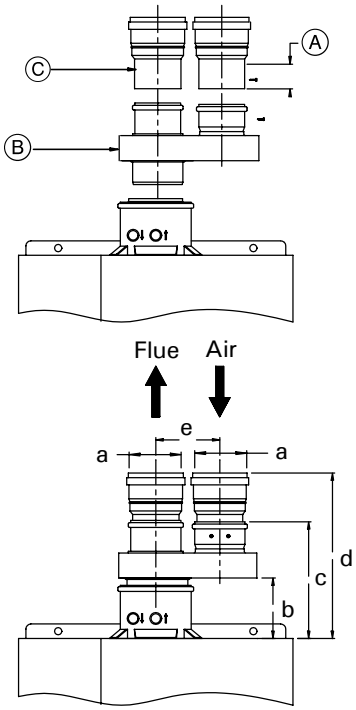


Fig. 37

Legend

Ⓐ Air intake, max. insertion 2½" / 64mm (use sheet metal screws to hold in place)
Ⓑ Viessmann parallel adaptor
Ⓒ Stainless steel slip joint vent starter adaptor
a 4" / 100mm
b $5^{1}/_{8}$" / 130mm
c $9^{3}/_{8}$" / 237mm
d $12^{7}/_{8}$" / 327mm
e 5½" / 140mm

Vent Requirements - Stainless Steel *(continued)*

Additional requirements for stainless steel vent pipe material *(continued)*

Table 35. Exhaust vent termination options (vertical installation)

Supplier	Boiler Model	Stainless Steel Slip Joint Starter Adaptor		Vertical Termination Coupling with Screen (see fig. 38)	
Flexmaster	■ WB1B 10-26. 10-35 WB2B 9-19/26/35	3″	2SVSVB03	3″	2SVST03
	■ WB2B 17-45, 17-60	3″	2SVSVB03	3″	2SVST03
	■ WB2B 30-80, 30-105	4″	2SVSVB04	4″	2SVST04
Heat-Fab	■ WB1B 10-26. 10-35 WB2B 9-19/26/35	3″	9301VSMN	3″	9392
	■ WB2B 17-45, 17-60	3″	9301VSMN	3″	9392
	■ WB2B 30-80, 30-105	4″	9401VSMN	4″	9492
ProTech	■ WB1B 10-26. 10-35 WB2B 9-19/26/35	3″	300568	3″	300186
	■ WB2B 17-45, 17-60	3″	300568	3″	300186
	■ WB2B 30-80, 30-105	4	300569	4″	300187
Security Chimneys	■ WB1B 10-26. 10-35 WB2B 9-19/26/35	3″	CTX-V3	Contact the supplier.	
	■ WB2B 17-45, 17-60	3″	CTX-V3		
	■ WB2B 30-80, 30-105	4″	CTX-V4		

Table 36. Other exhaust vent termination options (horizontal installation)

Supplier	Boiler Model	Termination Elbow with Screen 90° or 45° (see fig. 39)	Termination Tee with Screen (see fig. 40)	Termination Hood with Screen (see fig. 41)
Flexmaster	■ WB1B 10-26. 10-35 WB2B 9-19/26/35 ■ WB2B 17-45, 17-60 ■ WB2B 30-80, 30-105	Contact supplier	Contact supplier	Contact supplier
Heat-Fab	■ WB1B 10-26. 10-35 WB2B 9-19/26/35 ■ WB2B 17-45, 17-60 ■ WB2B 30-80, 30-105	Contact supplier	Contact supplier	Contact supplier
ProTech	■ WB1B 10-26. 10-35 WB2B 9-19/26/35 ■ WB2B 17-45, 17-60 ■ WB2B 30-80, 30-105	Contact supplier	Contact supplier	Contact supplier

These tables reflect the parts required if using special venting system for both exhaust vent and air intake pipe system.
If using ABS/PVC/CPVC material for combustion air intake pipe, (refer to table 38. for proper starter adaptor for the system).

Table 37. Maximum equivalent length Vitodens 200-W WB2B Series (horizontally or vertically vented)

Boiler model		Stainless Steel Vent Diameter	
		3″	4″
■ WB2B 9-19/26/35	ft. / m	148/45	180/55
■ WB2B 17-45, 17-60	ft. / m	98/30	148/45
■ WB2B 30-80, 30-105	ft. / m	---	131/40

Component Parts of the Venting System

Termination
Coupling with Screen

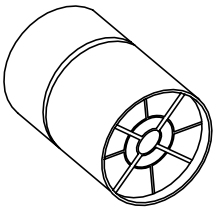


Fig. 38

Termination
Elbow with Screen
90° or 45°

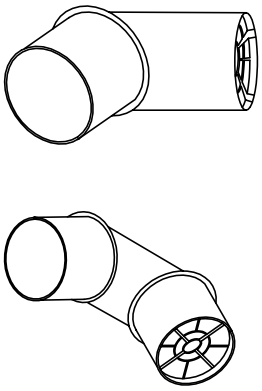


Fig. 39

Termination Tee with Screen

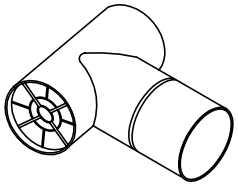


Fig. 40

Termination Hood with Screen

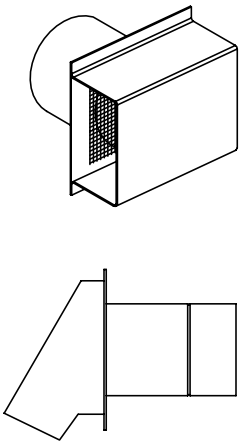


Fig. 41

Vent Requirements - CPVC

Additional requirements for UL/ULC-listed CPVC vent pipe material

Use UL/ULC-listed special plastic pipe (CPVC) for horizontal (side wall) or vertical (roof) venting of the Vitodens boilers.
See table 38. below and contact Viessmann to order.

Prior to installation, check that the correct single-wall vent parts were ordered and supplied.

See table 38. for special starter adaptor and bird screen models required for your installation. In case of discrepancies, contact Viessmann.

Exhaust vent/air intake connection to boiler

The vent connection to the Vitodens boiler must be made with the starter stainless steel adaptor (supplied by others and/or parallel adaptor see table 38). The starter adaptors are intended for a slip fit and slide into the parallel adaptor with a gentle twisting motion.

For vent/air intake pipe system, two wire mesh screens (bird screen) must be ordered from Viessmann. These parts are available in pre-cut diameters of 2", 3" and 4" (see table 38.).

Note:
The Vitodens boiler has passed the zero inches vent clearance to combustibles testing requirements dictated by the Harmonized Standard ANSI Z21.13. CSA 4.9.2007 and therefore is listed for zero clearance to combustibles when vented with a single wall special venting system (CPVC material). The zero inches vent clearance to combustibles for the Vitodens boiler supersedes the clearance to combustibles listing that appears on the special venting system marking label.

Approved vent pipe material

Marking

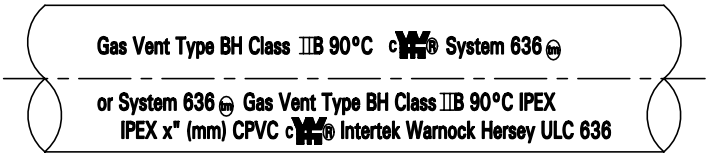


Fig. 42

IMPORTANT

For exhaust vent pipe material:
Do not use any other vent material.
Do not use galvanized pipe, plastic pipe and/or chimney liners (rigid or flexible) of any kind.

WARNING

The use of vent material other than listed CPVC, positive pressure vent pipe and fittings can cause property damage, severe personal injury and/or loss of life.

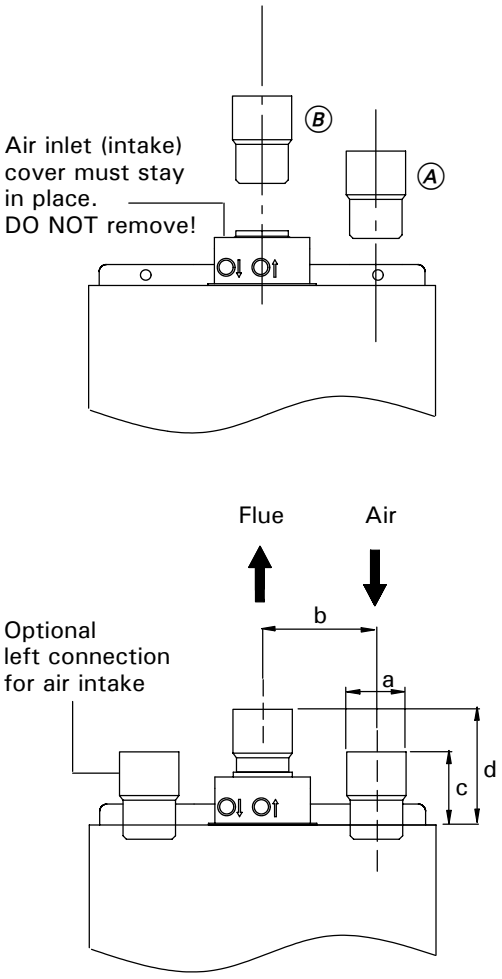
Table 38. Required starter adaptors for CPVC system

Part	Boiler Model	Diameter	Supplier	Qty.
Parallel Pipe Adaptor	■ WB2B 17-45, 17-60 ■ WB2B 30-80, 30-105	3" 4"	Viessmann	1 1
CPVC Starter Adaptor	■ WB1B 10-26, 10-35 WB2B 9-19/26/35 ■ WB2B 17-45, 17-60 ■ WB2B 30-80, 30-105	2" *1 3" *2 4" *3	Viessmann	2 2 2 2
Wire Mesh Screen for Termination Elbows/Coupling	■ WB1B 10-26, 10-35 WB2B 9-19/26/35 ■ WB2B 17-45, 17-60 ■ WB2B 30-80, 30-105	2" 3" (if used) 4" (if used) 3" 4"	Viessmann	2 2 2 2 2

*1 *See fig. 43 on page 53.*
*2 *See fig. 44 on page 54.*
*3 *See fig. 45 on page 54.*

Vent Pipe Starter Adaptors

Parallel vent pipe starter adaptors for WB1B 10-26, 10-35 / WB2B 9-19/26/35



Legend

Ⓐ Air intake starter adaptor, 2″
Ⓑ CPVC slip joint starter adaptor, 2″
a 2″ / 51mm
b 4¾″ / 120mm
c 3″ / 76mm
d 4¾″ / 120mm

Fig. 43

WARNING

(For this type of installation only:) Boiler comes with pre-installed combustion air cover mounted on the concentric vent pipe adaptor. Do not remove combustion air intake cover. Removing this cover may cause unintended room air dependent operation (non-direct vent). Room air dependent operation requires provision of combustion and ventilation air (as per section "Single Wall Venting", page 64).

Vent Pipe Starter Adaptors

Parallel vent pipe starter adaptors for WB2B 17-45, 17-60

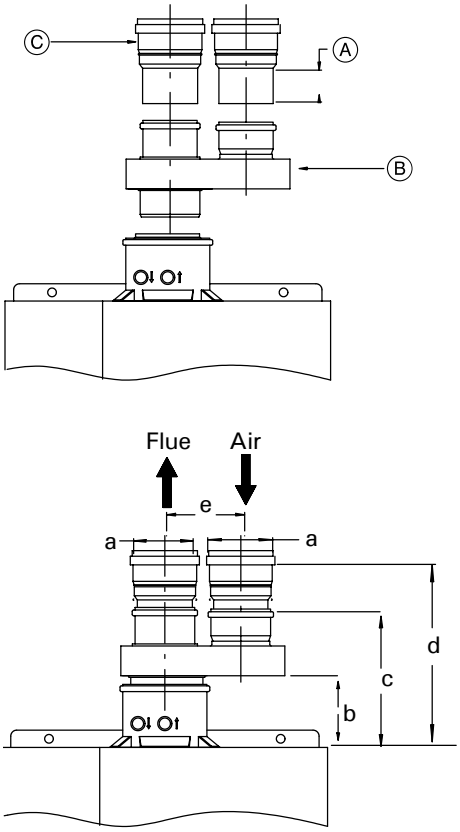


Fig. 44

Legend

- Ⓐ Air intake, max. insertion 2½" / 64mm (use sheet metal screws to hold in place)
- Ⓑ Viessmann parallel adaptor
- Ⓒ CPVC slip joint starter adaptor
- a 3" / 76mm
- b 2¾" / 70mm
- c 7" / 178mm
- d approx. 9$^{3}/_{8}$" / 237mm
- e 4¾" / 120mm

Parallel vent pipe starter adaptors for WB2B 30-80, 30-105

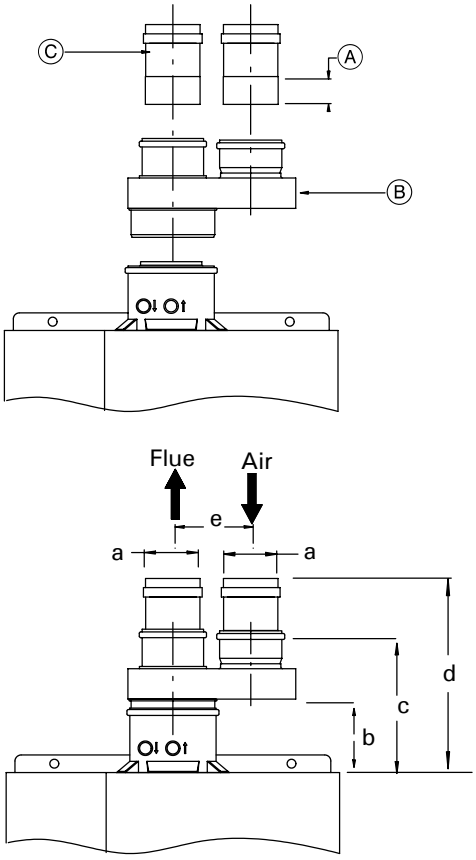


Fig. 45

Legend

- Ⓐ Air intake, max. insertion 2½" / 64mm (use sheet metal screws to hold in place)
- Ⓑ Viessmann parallel adaptor
- Ⓒ CPVC slip joint starter adaptor
- a 4" / 100mm
- b 5$^{1}/_{8}$" / 130mm
- c 9$^{3}/_{8}$" / 237mm
- d approx.12" / 305mm
- e 5½" / 140mm

Side Wall Vent Termination (stainless steel or CPVC)

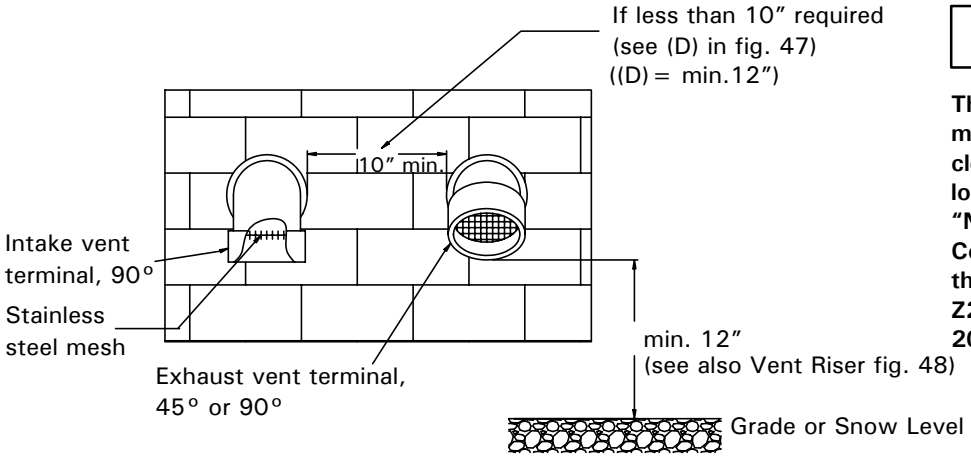


Fig. 46 Side wall vent termination (front view)

IMPORTANT

The exhaust vent/air intake system must terminate so that proper clearances are maintained as cited in local codes or the latest edition of the "Natural Gas and Propane Installation Code" CAN/CSA-B149.1 (Canada), or the "National Fuel Gas Code" ANSI Z223.1 (NFPA 54) (U.S.A.). See pages 20 and 21.

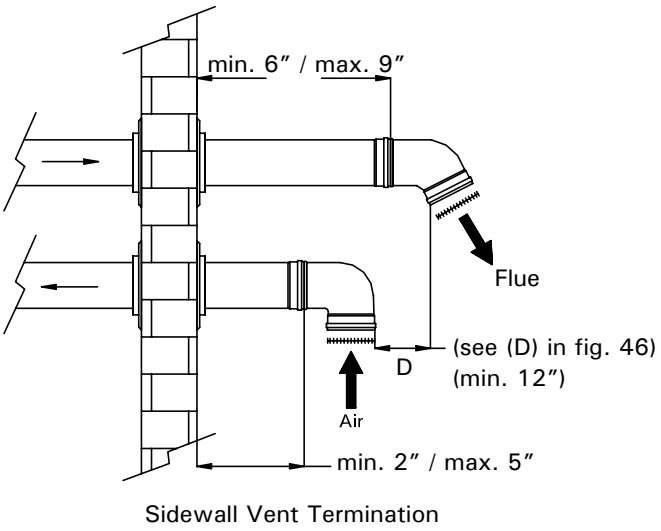


Fig. 47 Side wall vent termination (side view)

WARNING

Vent termination must be at least 12″/300 mm above the anticipated snow level (consult your local building authorities or local weather office). Locate vent termination in such a way that it cannot be blocked by snow.

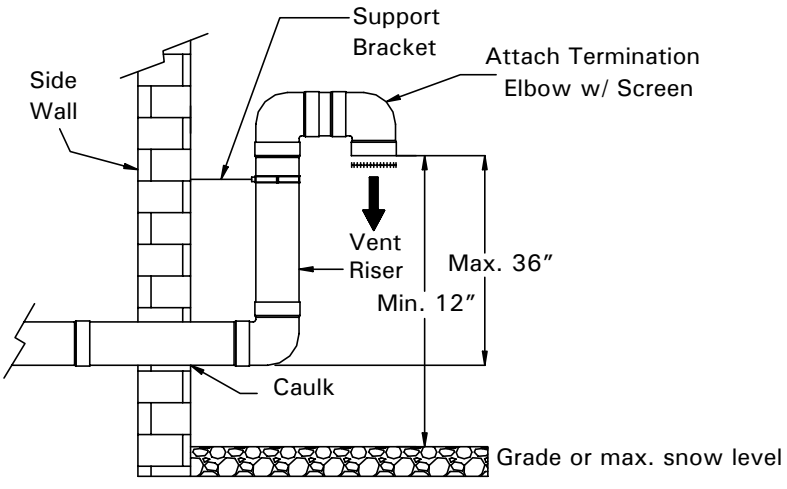


Fig. 48 Installation of field fabricated vent riser

5368 815 v2.0 b

Vent Length Requirements

Maximum vent/air intake pipe length - horizontal

IMPORTANT

Always include vent termination length in calculations.

The total equivalent length specified for a two pipe system is the total **combined** length of the exhaust vent and air intake pipe system. Do not exceed these maximum lengths. See table 39 and fig. 49 and 50 for reference.

Table 39. Maximum allowable equivalent length - horizontal

Boiler Model	System Ø See note below	Max. combined equivalent vent length (a + b) *2
■WB1B 10-26, 10-35	2″ / 51mm 3″ / 76mm *1 4″ / 102mm *1	86ft. / 31m 164ft. / 50m 200ft. / 61m
■WB2B 9-19/26/35	2″ / 51mm 3″ / 76mm 4″ / 102mm	115ft. / 35m 148ft. / 45m 180ft. / 55m
■WB2B 17-45, 17-60	3″ / 76mm 4″ / 102mm	98ft. / 30m 148ft. / 45m
■WB2B 30-80, 30-105	4″ / 102mm	131ft. / 40m

**1 2″ to 3″ or 2″ to 4 ″ increaser field supplied. Do not order Viessmann 3″ or 4″ starter adaptor.*
**2 See figure 49 and 50*

Note:
For combination of different vent/air intake pipe diameters, such as Ø 3″ stainless steel vent with Ø 2″ (CVPC, PVC, ABS) air intake pipe, the total equivalent length must be used for the smaller pipe diameter.

Maximum of five 90° elbows allowed in the **entire** vent and air intake system (first 90° elbows are not included see fig. 55). Minimum vent length is 3.3 ft. / 1m.

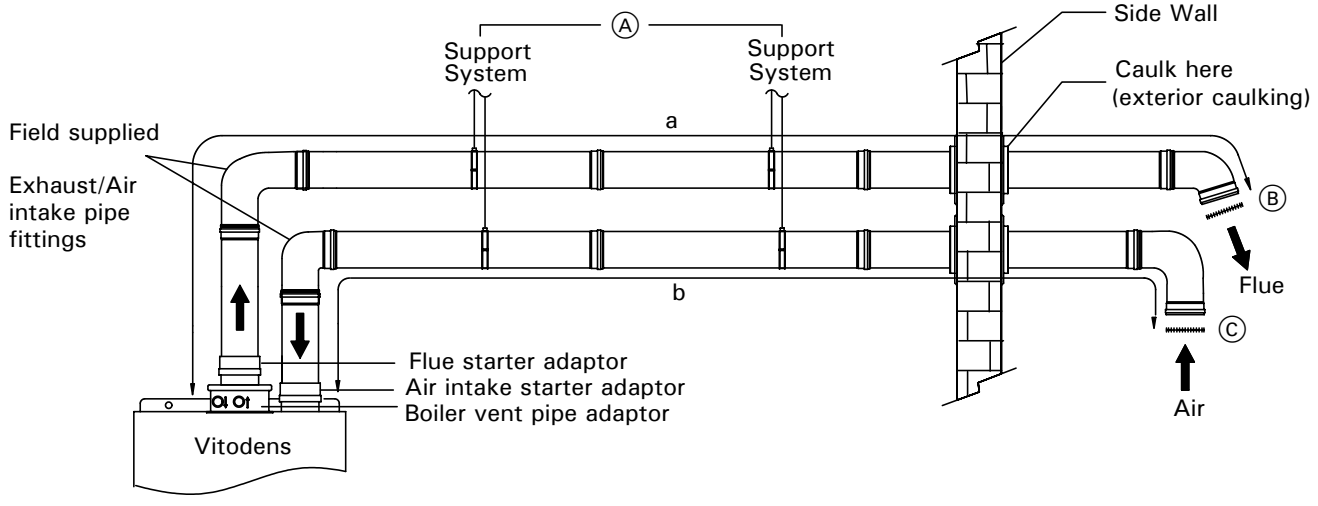


Fig. 49 Vitodens 100-W and 200-W WB2B 9-19, 9-26, 9-35

Legend
Ⓐ Support system
Ⓑ Exhaust pipe termination with screen
Ⓒ Combustion air intake with screen
a Equivalent vent length (exhaust)
b Equivalent vent length (air intake)

Vent Length Requirements *(continued)*

Maximum vent/air intake pipe length - horizontal *(continued)*

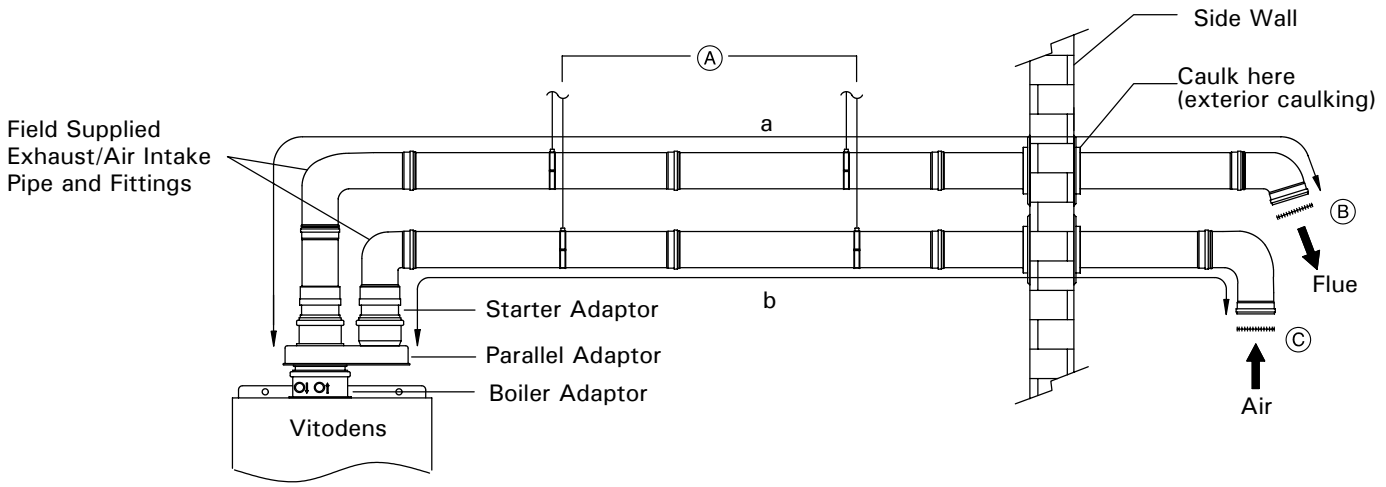


Fig. 50 Vitodens 200-W WB2B 17-45, 17-60, 30-80, 30-105

Legend
Ⓐ Support system
Ⓑ Exhaust pipe termination with screen
Ⓒ Combustion air intake with screen
a Equivalent vent length (exhaust)
b Equivalent vent length (air intake)

Maximum vent/air intake pipe length - vertical

The total equivalent length specified for a two pipe system is the total **combined** length of the exhaust vent and air intake pipe system. Do not exceed these maximum lenghts. See table 40., as well as fig. 49 and 50, for reference.

Table 40. Maximum allowable equivalent length - vertical

Boiler Model	System Ø See note below	Max. combined equivalent vent length (a + b) *2
■WB1B 10-26, 10-35	2″ / 51mm 3″ / 76mm *1 4″ / 102mm *1	86ft. / 31m 164ft. / 50m 200ft. / 61m
■WB2B 9-19/26/35	2″ / 51mm 3″ / 76mm 4″ / 102mm	115ft. / 35m 148ft. / 45m 180ft. / 55m
■WB2B 17-45, 17-60	3″ / 76mm 4″ / 102mm	98ft. / 30m 148ft. / 45m
■WB2B 30-80, 30-105	4″ / 102mm	131ft. / 40m

1 2″ to 3″ or 2″ to 4 ″ increaser field supplied. Do not order Viessmann 3″ or 4″ starter adaptor.
2 See figure 49 and 50

Vent Length Requirements *(continued)*

Maximum vent/air intake pipe length - vertical *(continued)*

Note:
For combination of different vent/air intake pipe diameters, such as Ø 3" stainless steel vent with Ø 2" (CVPC, PVC, ABS) air intake pipe, the total equivalent length must be used for the smaller pipe diameter.

Maximum of five 90° elbows allowed in the **entire** vent and air intake system (see fig. 55).
Minimum vent length is 3.3 ft. / 1m.

Vertical Vent Installation
Vitodens 100-W and
200-W WB2B 9-19, 9-26, 9-35

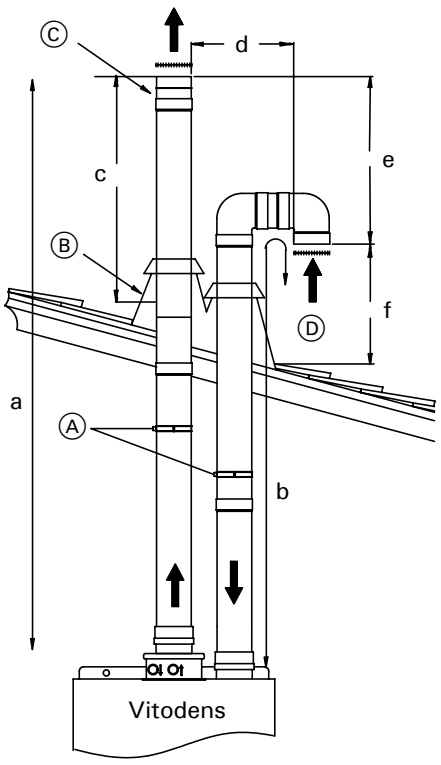


Fig. 51

Vertical Vent Installation
Vitodens 200-W WB2B 17-45, 17-60, 30-80, 30-105

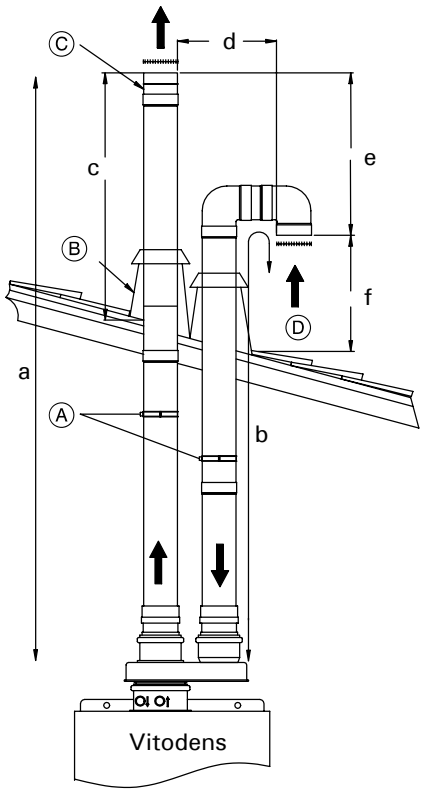


Fig. 52

Legend

- Ⓐ Support system
- Ⓑ Flashings
- Ⓒ Exhaust (straight coupling) with screen
- Ⓓ Combustion air intake with screen
- a Equivalent length (exhaust)
- b Equivalent length (air intake)
- c min. 18" / max. 48"
- d min. 12"
- e min. 12"
- f 6" over max. local snow level (check with your local weather office for details)

Vent Length Requirements *(continued)*

Maximum vent/air intake pipe length - horizontal/vertical (hybrid system)

The total equivalent length specified for a two pipe system is the total **combined** length of the exhaust vent and air intake pipe system. Do not exceed these maximum lenghts. See table 41, as well as fig 49 and 50 for reference.

Table 41. Maximum allowable equivalent length - vertical exhaust / horizontal air intake (hybrid)

Boiler Model	System Ø See note below	Max. combined equivalent vent length (a + b) *2
■WB1B 10-26, 10-35	2″ / 51mm 3″ / 76mm *1 4″ / 102mm *1	86ft. / 31m 164ft. / 50m 200ft. / 61m
■WB2B 9-19/26/35	2″ / 51mm 3″ / 76mm 4″ / 102mm	115ft. / 35m 148ft. / 45m 180ft. / 55m
■WB2B 17-45, 17-60	3″ / 76mm 4″ / 102mm	98ft. / 30m 148ft. / 45m
■WB2B 30-80, 30-105	4″ / 102mm	131ft. / 40m

*1 *2″ to 3″ or 2″ to 4 ″ increaser field supplied. Do not order Viessmann 3″ or 4″ starter adaptor.*

*2 *See figure 49 and 50*

Note:
For combination of different vent/air intake pipe diameters, such as Ø 3″ stainless steel vent with Ø 2″ (CVPC, PVC, ABS) air intake pipe, the total equivalent length must be used for the smaller pipe diameter.

Maximum of five 90° elbows allowed in the **entire** vent and air intake system (see fig. 55). Minimum vent length is 3.3 ft. / 1m.

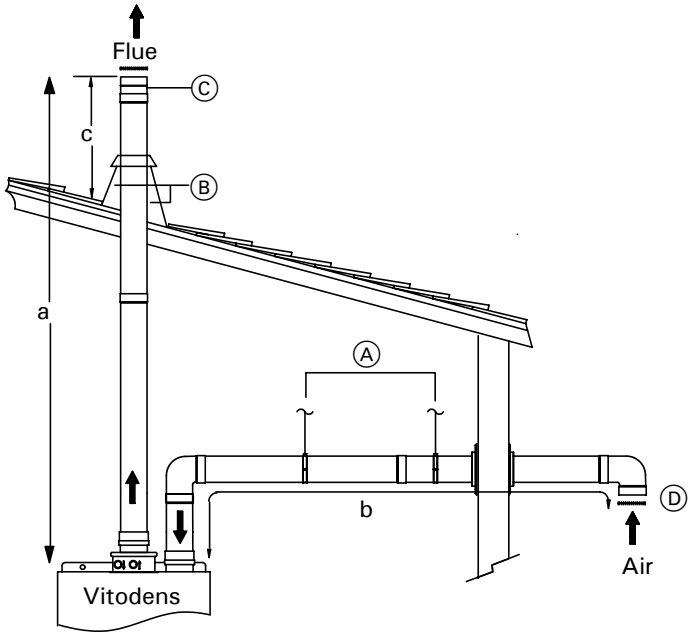


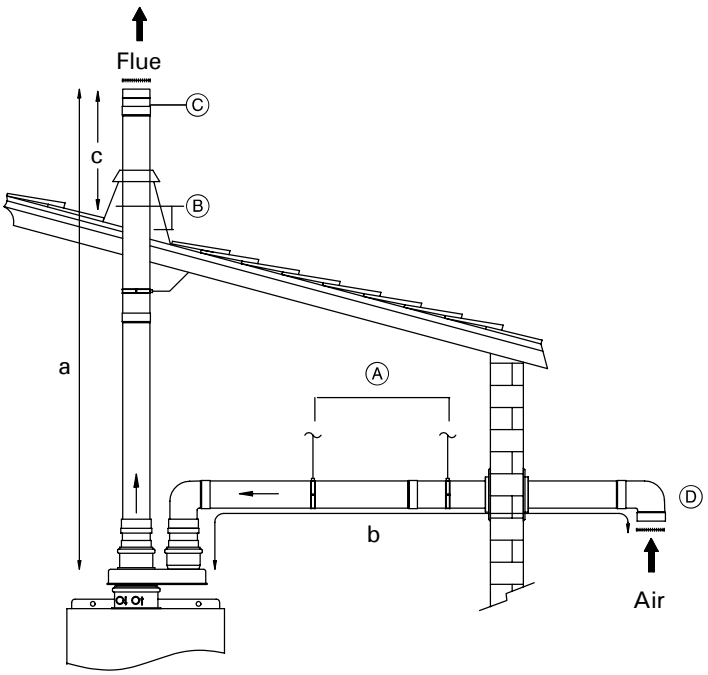
Fig. 53 Vitodens 100-W and 200-W BW2B 9-19/26/35

Legend

- Ⓐ Support system
- Ⓑ Flashings
- Ⓒ Exhaust (straight coupling) with screen
- Ⓓ Combustion air intake with screen
- a Equivalent length (exhaust)
- b Equivalent length (air intake)
- c min. 18″ / max. 48″

Vent Length Requirements *(continued)*

Maximum vent/air intake pipe length - horizontal/vertical (hybrid system) *(continued)*

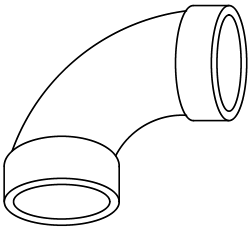


Legend

- Ⓐ Support system
- Ⓑ Flashings
- Ⓒ Exhaust (straight coupling) with screen
- Ⓓ Combustion air intake with screen
- a Equivalent length (exhaust)
- b Equivalent length (air intake)
- c min. 18″ / max. 48″

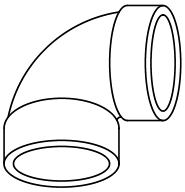
Fig. 54 Vitodens 200-W WB2B 17-45, 17-60, 30-80, 30-105

Standard long sweep elbows (for CPVC pipe only)



For plastic pipe only

90° long sweep elbow
equivalent to 5 ft. / 1.5m



90° short sweep elbow
equivalent to 8 ft. / 2.4m
(if used)

Fig. 55

Note:
If standard sweep elbows are used the allowable vent lengths are reduced.
One standard 90° elbow is equivalent to 8ft. / 2.4m of straight pipe.

Table 42. Standard long sweep elbows

Material	90° elbow equivalent length ft. / m	45° elbow equivalent length ft. / m
Stainless steel	3 / 0.91	2 / 0.61
CPVC plastic pipe	5 / 1.52	3 / 0.91

Vent Length Requirements

Maximum equivalent vent length - stainless steel system with plastic air intake pipe

Table 43. (see also fig. 55)

Vent type	Type of fitting	Equivalent length ft. / m
Exhaust vent pipe	90° elbow (stainless steel)	3 / 0.91
	45° elbow (stainless steel)	2 / 0.61
Air intake pipe	90° elbow (ABS/PVC)	5 / 1.52
	45° elbow (ABS/PVC)	3 / 0.91

IMPORTANT

Always include vent termination length in calculations.

Equivalent vent length calculation example (Vitodens WB1B and WB2B system diameter 3")

Maximum allowable equivalent length is 164 ft. / 50 m (see table 39 and fig. 49 on page 56)

2 x 90° stainless steel elbow ..... 6 ft./1.83 m
2 x 45° stainless steel elbow ..... 4 ft./1.22 m

Air intake pipe
1 x 90° plastic (ABS/CPVC/PVC) elbow ..... 5 ft./1.52 m
1 x 45° plastic (ABS/CPVC/PVC) elbow ..... 3 ft./0.91 m

Exhaust vent pipe ..... 10 ft./3.05 m
Air intake pipe ..... 10 ft./3.05 m
Combined total equivalent vent length (a + b) 38 ft./11.58 m

Vent Length Requirements

Maximum equivalent vent length - CPVC system

Table 44. (see also fig. 55)

Type of fitting	Equivalent length ft. / m
90° long sweep elbow (CPVC)	5 / 1.52
45° long sweep elbow (CPVC)	3 / 0.91

Equivalent vent length calculation example (Vitodens WB1B or WB2B system diameter 2")

Maximum allowable equivalent length is 86 ft. / 31 m (see table 39 and fig. 49 on page 56)

2 x 90° elbow	10 ft./3.05 m
4 x 45° elbow	12 ft./3.66 m
Exhaust vent pipe	10 ft./3.05 m
Air intake pipe	10 ft./3.05 m
Combined total equivalent vent length (a + b)	42 ft./12.81 m

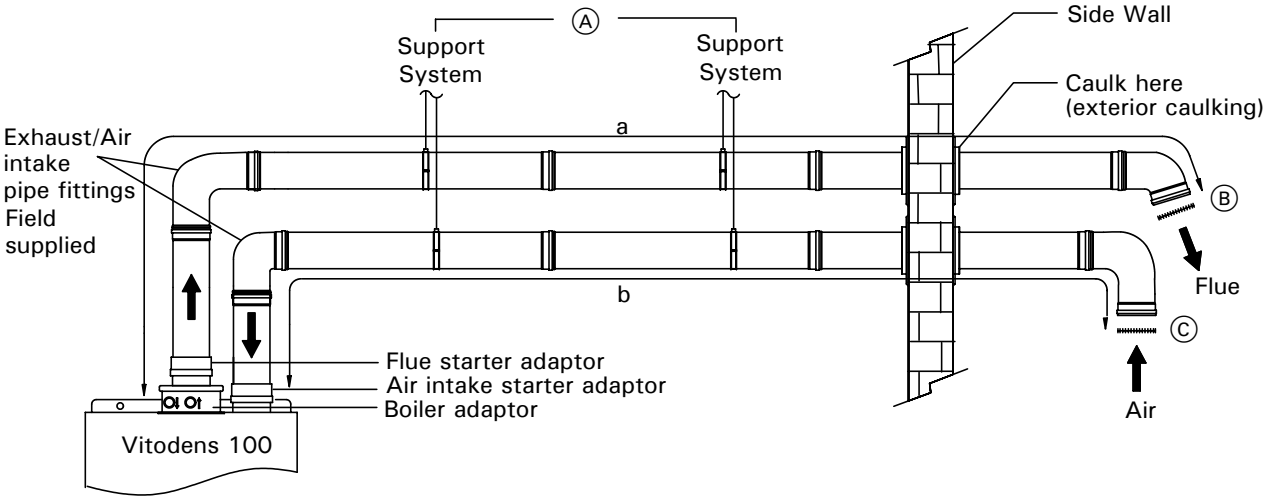


Fig. 56 Vitodens 100-W and 200-W, WB2B 9-19, 9-26, 9-35

Legend
- Ⓐ Support system
- Ⓑ Exhaust pipe termination with screen
- Ⓒ Combustion air intake with screen
- a Equivalent vent length (exhaust)
- b Equivalent vent length (air intake)

Vent Length Requirements *(continued)*

Maximum equivalent vent length - CPVC system *(continued)*

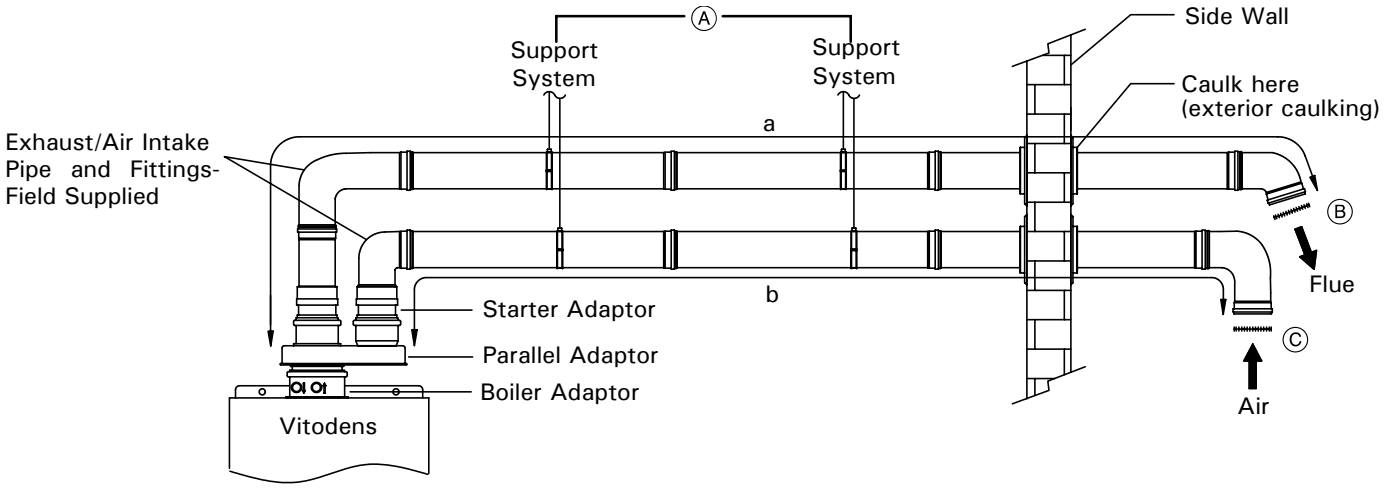
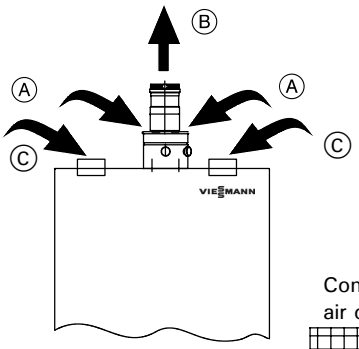


Fig. 57 Vitodens 200-W WB2B 17-45, 17-60, 30-80, 30-105

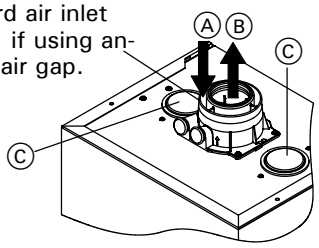
Legend

Ⓐ Support system
Ⓑ Exhaust pipe termination with screen
Ⓒ Combustion air intake with screen
a Equivalent vent length (exhaust)
b Equivalent vent length (air intake)

Venting - Single Wall (Room Air Dependent)



Combustion air opening



Remove and discard air inlet cover if using annular air gap.

Ⓐ Room/Combustion air
Ⓑ Exhaust
Ⓒ Room combustion air inlets

WB2B 17-45/60, 30-80/105 Models

This system draws combustion air from the boiler room. Room/Combustion air Ⓐ enters the boiler at the boiler vent pipe adaptor through an annular air gap. If using annular air gap, remove and discard air inlet cover or optional opening to the left or right Ⓒ. Flue gases Ⓑ are discharged to the outdoors via the single-wall pipe of the special venting system.
Remove air inlet cover Ⓒ and discard (optional).

Vent Requirements

Combustion air supply

This boiler requires fresh air for safe operation and must be installed in a mechanical room where there are provisions for adequate combustion and ventilation air.
There are no provisions available on the Vitodens boiler to interlock it with an external combustion air blower.

The Vitodens boiler is suitable for sidewall, as well as vertical venting using field supplied venting material. The Vitodens 100-W and 200-W boilers are approved for direct exhaust (non-sealed combustion) operation in both, horizontal and vertical arrangements.

Provisions for combustion and ventilation air must be made in accordance with CAN/CSA-B149.1 or .2 Natural Gas Installation Codes (latest edition) (for installations in Canada) or in accordance with sections for Combustion and Ventilation Air, of the National Fuel Gas Code, ANSI Z223.1 (latest edition)
or applicable provisions of local codes (for installations in the U.S.A.)

Follow local codes to properly isolate the vent pipe when passing through floors, ceilings and roof.

Whenever possible, install boiler near an outside wall so that it is easy to duct fresh air directly to the boiler area. Refer to national codes for duct sizing. Round ducts may be used.
The boiler must be vented and supplied with combustion air and exhaust vents as described in this section. Ensure the vent and combustion air supply comply with these instructions.

⚠ WARNING

Failure to provide an adequate supply of fresh combustion air can cause poisonous flue gases to enter living space, which can cause severe personal injury or loss of life.

The boiler location should never be under negative pressure. Exhaust fans, attic fans, or dryer fans may cause air to be exhausted at a rate higher than the air can enter the structure for safe combustion. Corrective action must be taken to ensure enough air is availabe. Never cover the boiler or store debris or other materials near the boiler, or in any way block the flow of adequate fresh combustion air to the boiler.

If boiler is installed in a confined space (a space with a volume of less than 50 cubic feet per 1000 Btu/h of gas input for all fuel burning equipment) or building layout is unusually tight, adequate air for combustion must be provided by two openings: one located about 6" below the ceiling, the other about 6" above the floor. When communicating directly with the outside, each opening must have a minimum free area of one square inch per 2000 Btu/h of gas input. When all combustion air is provided by openings in doors, etc. to adjoining spaces having adequate infiltration, each opening must have a minimum free area of one square inch per 1000 Btu/h of gas input, but not less than 100 in^2.

You must know the free area of louvers used to cover up the combustion and ventilation openings in closet installations. If you do not know the free area, assume 20% for wood louvers and 60-75% free area for metal louvers. When using louvers, the openings have to be made larger. For example, a free 14" x 6" opening becomes a 14" x 10" opening for a grill containing metal louvers.

⚠ Caution

Do not store chemicals containing chlorine or other corrosive materials near the boiler, such as bleach, cleaning solvents, detergents, acids, hair spray, spray cans, paint thinners, paint, water softener salt, perchloroethylene, or carbon tetra chloride.

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Vent Requirements *(continued)*

Combustion air supply *(continued)*

Inspect all finished exhaust vent/air intake piping to ensure:
- Vent pipe and fittings are of approved material.
- Acceptable size, length and number of elbows on combined vent pipe system.
- Installation is in accordance with prevailing provisions of local codes.
- Installation complies with the requirements of these instructions, as well as the exhaust vent supplier's instructions.

The exhaust vent system and terminations may be installed in one of the following types of terminations:

1. Horizontal exhaust vent
2. Vertical exhaust vent

⚠ CAUTION

Exposure to corrosive materials can cause heat exchanger corrosion and failure.

⚠ CAUTION

Do not locate boiler in areas where high dust levels or high humidity levels are present.

⚠ CAUTION*

Do not install boiler during construction involving drywall or heavy dust of any kind. Dust can accumulate in the burners and cause sooting. Install boiler after all heavy dust construction is completed.

** Typically when the boiler is used as a temporary heat source during the building construction phase.*

⚠ CAUTION

If the boiler has been exposed to high dust levels, all burners and the heat exchanger must be cleaned prior to use.

Note:
If above criteria are not properly observed and boiler damage results, any warranty on the complete boiler and related components will be null and void.

General Installation Information

The Vitodens boiler must be located in such a way that the vent length is as short as possible and that the vent can be routed as directly (and with as few bends) as possible.
The minimum equivalent vent length is 4 ft. / 1.2 m.
See tables 50. and 51 for maximum and minimum vent lengths.

All products of combustion must be safely vented to the outdoors.
The Vitodens boiler is not approved for common-venting applications. Do not common-vent with any other appliance.
The Vitodens boiler vents under positive pressure and is a Category IV boiler.

⚠ WARNING

Failure to ensure that all flue gases have been safely vented to the outdoors can cause property damage, severe personal injury, or loss of life. Flue gases may contain deadly carbon monoxide.

Viessmann recommends that the entire vent system be checked by a licensed professional heating contractor at least once each year following initial installation.

The stainless steel special venting system is completely sealed when fully assembled. Locking bands are used to reinforce the joints between pipe and fittings.

⚠ WARNING

Different manufacturers offer a number of different joint systems and adhesives. Do not mix pipes, fittings and/or joining methods from different manufacturers. Failure to comply could result in leakage, potentially causing personal injury or death.

Do not install vent pipe such that flue gases flow downwards. The direction of flue gas flow must be vertically upwards or horizontal with an upward slope.

Ensure there is no flue gas leakage into the area in which the boiler is installed.

Check joints for leaks with the gas supply turned off and the fan running. Use a soapy solution to check for vent leaks.

Condensate must drain from the flue pipe to the boiler. Ensure a suitable gradient of at least 3° (approx. 2" per 3.3 ft. / 50 mm per 1 m).
No condensate trap is required in the vent pipe system.

General Installation Information *(continued)*

Installation steps (outline)

Exhaust vent pipe material

Use only the materials listed in table 45. for exhaust vent pipe fittings.

- Cut the pipe end square and remove all burrs and debris from joints and fittings.
- If using CPVC special vent material for exhaust vent pipe, all joints must be properly cleaned, primed and cemented. Use only cement and primer approved for the use with the pipe material. See table 45 for approved solvent cement material.

⚠ CAUTION

For solvent cement and primer:
- **Use only in well ventilated areas**
- **Do not use near flame or open fire**
- **Use only the solvent cement and primer appropriate for the venting material being used**
- **Solvent cements for plastic pipe are flammable liquids and must be kept away from all sources of ignition**

- No low point is allowed in the exhaust vent pipe system, unless a proper drain pipe is used to allow condensate to drain.

⚠ WARNING

Ensure that the entire venting system is protected from physical damage. A damaged venting system may cause unsafe conditions.

⚠ WARNING

The venting system is approved for indoor installations only.
Do not install the venting system outdoors.

- Route vent pipe as directly as possible and with as few bends as possible to the boiler.
- Condensate must drain from the flue pipe to the boiler. Ensure a suitable gradient of at least 3° (approx. 2″ per 3.3 ft. / 50 mm per 1 m).
- Use a hacksaw and sheet metal snips to cut pipes to length (if necessary). Use a file to smooth rough edges. Pipe must be round and not bent into an oval shape.

IMPORTANT

When cutting pipes to length, debur and clean pipes.

In conjunction with these instructions, follow the installation instructions supplied by the special venting manufacturer.
Viessmann Venting System Instructions supersede the instructions supplied by the manufacturer.

- All piping must be fully supported. Use pipe hangers at a minimum of 48″ / 1219 mm intervals to prevent sagging of the pipe.
- The exhaust vent pipe and fittings must be securely supported by a support system suitable for the weight and design of the material employed. Contact your local vent material supplier for more information specific to your installations.

IMPORTANT

Ensure that the exhaust vent pipes are properly supported. The Vitodens boiler is not designed to support the weight of the exhaust vent pipe system.

- Field supplied increaser fittings (transitions) should always be made in vertical sections of pipe to prevent accumulation of condensate in the vent pipe.
- A maximum of five 90° elbows may be installed in **combined** length of the exhaust vent/air intake pipe system (excluding termination elbows, tees, hoods and couplings).

General Installation Information *(continued)*

Approved materials for single-wall vent system

Table 45. Approved materials for single-wall vent system

Part	Material	Certified to Standards	Applicability
Exhaust pipe and fitting	Stainless steel	UL1738 "Venting systems for gas-burning appliances, Categories II, III, IV"	U.S.A.
		ULC S636 "standard for Type BH gas venting systems"	Canada
	CPVC	UL1738 "Venting systems for gas-burning appliances, Categories II, III, IV"	U.S.A.
		ULC S636 "standard for Type BH gas venting systems"	Canada
Pipe cement, primer (for combustion air intake pipe only)	PVC	ANSI/ASTM D2564 CSA B137.3	U.S.A./Canada
	CPVC	ANSI/ASTM F493 CSA B137.6	
	ABS	ANSI/ASTM D2235 CSA B181.1/B182.1	
Pipe cement, primer (for exhaust pipe and fitting)	CPVC	ULC S636 "Standard for Type BH gas venting systems" Class IIB 90°C	U.S.A./Canada

⚠ CAUTION

Do not use cellular (foam) core pipe material to vent the Vitodens boiler.

General Installation Information *(continued)*

Vent termination location requirements (for installations in Canada)

The vent must be installed observing local regulations in addition to National Codes, CAN/CSA-B149.1 or 2.
A vent must **NOT** terminate...

1. ....directly above a paved sidewalk or paved driveway which is located between two single-family dwellings and serves both dwellings.

2. ....less than 7 ft./2.13 m above a paved sidewalk or a paved driveway located on public property.

3. ....within 6 ft./1.83 m of a mechanical air supply inlet *1 to any building (dryer vents, non-sealed combustion furnace and hot water heater vents are considered to be mechanical air inlets).

4. ....above a meter/regulator assembly within 3 ft./0.9 m horizontally of the vertical centerline of the regulator vent outlet and to a maximum vertical distance of 15 ft./4.5 m.

5. ....within 3 ft./0.9 m of any gas service regulator vent outlet.

6. ....less than 1 ft./0.3 m above grade level or anticipated snow level (consult local building authorities or local weather office). Locate the vent termination in such a way that it cannot be blocked by snow.

7. ....within the following distances of a window or door which can be opened in any building, any non-mechanical air supply inlet to any building or the combustion air inlet of any other appliance:

- 1 ft./0.3 m for inputs up to and including 100 000 Btu/h/30 kW (applicable only to boiler model WB1B-10-26).
- 3 ft./0.9 m for input exceeding 100 000 Btu/h/30 kW (applicable to boiler model WB1B 10-35).

8. ....underneath a veranda, porch or deck, unless

- the veranda, porch, or deck is fully open on a minimum of two sides beneath the floor, and
- the distance between the top of the vent termination and the underside of the veranda, porch, or deck is greater than 1 ft./0.3 m.

9. ....in areas where condensation may cause problems, such as above planters, patios, or adjacent to windows where flue gases may cause fogging.

10. ....within 3 ft./0.9 m to the property line (advisable, not mandatory; please check with local building authorities and municipal bylaws).

11. ....at a location where ice formation on the ground can present a hazard.

12. ....so that the flue gases are directed toward brickwork, siding, or other construction, in such a manner that may cause damage from heat or condensate from the flue gases.

13. ....where discharging hot flue gases may cause property damage or personal injury.

14. ....within 3 ft./0.9 m from an inside corner of outside walls.

*1 *Including heat recovery units.*

General Installation Information *(continued)*

Vent termination location requirements (for installations in the U.S.A.)

The vent must be installed observing local regulations in addition to National Codes, ANSI-Z223.1 or NFPA 54.
A vent must **NOT** terminate...

1. ....less than 7 ft./2.13 m above a paved sidewalk or a paved driveway located on public property.

2. ....within 4 ft./1.2 m horizontally from service regulator vents, electric and gas meters as well as relief equipment.

3. ....at least 3 ft./0.9 m above any forced air inlet located within 10 ft./ 3 m.

4. ....less than 1 ft./0.3 m above grade level or anticipated snow level (consult local building authorities or local weather office). Locate the vent termination in such a way that it cannot be blocked by snow.

5. ....within 1 ft./0.3 m of a window or door which can be opened in any building, any non-mechanical air supply inlet to any building or the combustion inlet of any other appliance.

6. ....in areas where condensation may cause problems, such as above planters, patios, or adjacent to windows where flue gases may cause fogging.

7. ....within 3 ft./0.9 m to the property line (advisable, not mandatory; please check with local building authorities and municipal bylaws).

8. ....at a location where ice formation on the ground can present a hazard.

9. ....so that the flue gases are directed toward brickwork, siding, or other construction, in such a manner that may cause damage from heat or condensate from the flue gases.

10. ....where discharging hot flue gases may cause property damage or personal injury.

11. ....within 3 ft./0.9 m from an inside corner of outside walls.

Flashing and storm collar installation

Flashings and storm collars are field supplied. **Flashings and storm collars suitable for Type B vent materials (or better) may be used.**

To obtain flashings and storm collars, please contact your local vent material supplier. Follow the installation instructions supplied by the special venting manufacturer.

Follow local codes to properly isolate the exhaust vent pipe when passing through floors, ceiling and roof.

Always check the marking on the pipe to make sure you are using the correct material.

General Installation Information *(continued)*

Support system

The venting system must be securely supported by a support system suitable for the weight and design of the materials employed.
The Vitodens boiler is not designed to support the weight of the venting system.

Use supports to transfer the weight of an installation to the building structure. There are different types of supports available and their capacity varies with each type and diameter.
The following support types are available at your local vent material supplier...

- anchor plate
- wall support
- roof support
- floor support
- suspension band (hanger).

In addition to the support types listed, mounting clips can be used to support the weight of the venting system.

Contact your vent material supplier for more information specific to your installation.

Follow the installation instructions supplied by the special venting manufacturer.

General Installation Information *(continued)*

Additional requirements for stainless steel vent pipe material

Use an AL29-4C® special stainless steel venting system (UL/ULC listed for category IV) for horizontal or vertical venting of the Vitodens boilers.
See tables 46. and 47. and contact one of the suppliers (see listing on right) to order.

Prior to installation, check that the correct single-wall vent parts were ordered and supplied.

See tables 46. and 47. for special stainless steel single-wall vent pipe starter adaptor, coaxial increasers and bird screen models required for your installation. In case of discrepancies, contact original parts supplier.

Exhaust vent pipe connection to boiler

The vent connection to the Vitodens boiler must be made with a coaxial increaser (for models WB1B 10-26/35 and WB2B 9-19/26/35) and starter stainless steel adaptors (supplied by others, see tables 46. and 47.). The starter adaptors are intended for a slip fit and slide into the boiler adaptor with a gentle twisting motion.

Note:
For stainless steel exhaust vent system, the minimum pipe diameter is 3" / 76mm.

Note:
The Vitodens boiler has passed the zero inches vent clearance to combustibles testing requirements dictated by the Harmonized Standard ANSI Z21.13. CSA 4.9.7000 and therefore is listed for zero clearance to combustibles when vented with a single wall special venting system. The zero inches vent clearance to combustibles for the Vitodens boiler supersedes the clearance to combustibles listing that appears on the special venting system label.

Flexmaster Canada Ltd.
452 Attwell Drive
Etobicoke, ON
M9W 5C3
Tel. (416) 679-0045

Z-FLEX (US) INC.
20 Commerce Park North
Bedford, NH
03110-691
Tel. (800) 654-5600

Heat-Fab, Inc.
130 Industrial Blvd.
Turners Falls, MA
01376
Tel. (800) 772-0739

ProTech Systems, Inc.
400 South Pearl Street
Albany, NY
12202
Tel. (800) 766-3473

Security Chimneys International Ltd.
2125 Rue Monterey
Laval, QC
H7L 3T6
Tel. (800) 363-0821

IMPORTANT

For exhaust vent pipe material:
Do not use any other vent material.
Do not use galvanized pipe, plastic pipe and/or chimney liners of any kind.

⚠ WARNING

The use of vent material other than AL29-4C stainless steel, positive pressure vent pipe and fittings can cause property damage, severe personal injury and/or loss of life.

Additional requirements for stainless steel vent pipe material *(continued)*

Table 46. Exhaust vent termination options

Supplier	Boiler Model	Stainless Steel Slip Joint Starter Adaptor		Vertical Termination Coupling with Screen (see fig. 61)	
Flexmaster	■ WB1B 10-29, 10-35 WB2B 9-19/26/35	3″	2SVSVB03	3″	2SVSVT03
	■ WB2B 17-45, 17-60	3″	2SVSVB03	3″	2SVSVT03
	■ WB2B 30-80, 30-105	4″	2SVSVB04	4″	2SVSVT04
Heat-Fab	■ WB1B 10-29, 10-35 WB2B 9-19/26/35	3″	9301VSMN	3″	9392
	■ WB2B 17-45, 17-60	3″	9301VSMN	3″	9392
	■ WB2B 30-80, 30-105	4″	9401VSMN	4″	9492
ProTech	■ WB1B 10-29, 10-35 WB2B 9-19/26/35	3″	300568	3″	300186
	■ WB2B 17-45, 17-60	3″	300568	3″	300186
	■ WB2B 30-80, 30-105	4″	300569	4″	300187
Security Chimneys	■ WB1B 10-29,10-35 WB2B 9-19/26/35	3″	CTX-V3	Contact the supplier.	
	■ WB2B 17-45, 17-60	3″	CTX-V3		
	■ WB2B 30-80, 30-105	4″	CTX-V4		

Note: Minimum vent pipe diameter with stainless steel vent system is 3″ / 76mm.

Table 47. Other exhaust vent termination options (horizontal installation)

Supplier	Boiler Model	Termination Elbow with Screen 90° or 45° (see fig. 62)	Termination Tee with Screen (see fig. 63)	Termination Hood with Screen (see fig. 64)
Flexmaster	■ WB1B 10-29, 10-35 WB2B 9-19/26/35 ■ WB2B 17-45, 17-60 ■ WB2B 30-80, 30-105	Contact supplier	Contact supplier	Contact supplier
Heat-Fab	■ WB1B 10-29, 10-35 WB2B 9-19/26/35 ■ WB2B 17-45, 17-60 ■ WB2B 30-80, 30-105	Contact supplier	Contact supplier	Contact supplier
ProTech	■ WB1B 10-29, 10-35 WB2B 9-19/26/35 ■ WB2B 17-45, 17-60 ■ WB2B 30-80, 30-105	Contact supplier	Contact supplier	Contact supplier

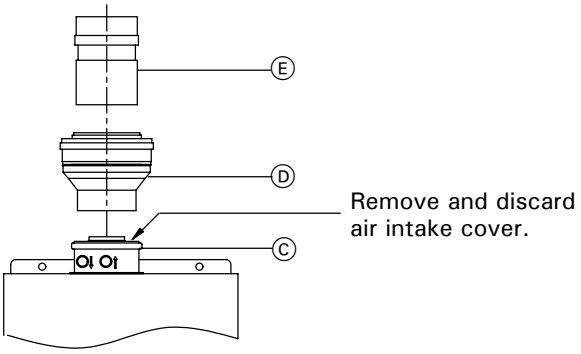
General Installation Information *(continued)*

Additional requirements for stainless steel vent pipe material *(continued)*

Table 48. Coaxial increaser
(min. stainless steel pipe diameter is 3″ / 76mm)
The coaxial increaser is required for the following boiler models.

Supplier	Boiler Model	Ø inches mm	Qty.
Viessmann	■ WB1B 10-29, 10-35 WB2B 8.5-19/26/35	2 to 3 60 to 80	1

Coaxial increaser Ⓓ for
WB1B 10-26, 10-35 and WB2B 9-19, 9-26, 9-35



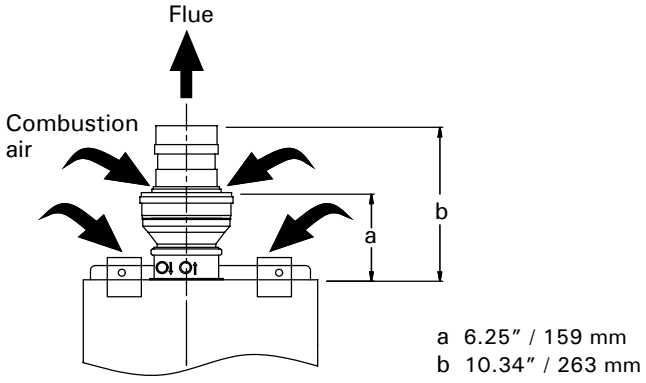


Fig. 58

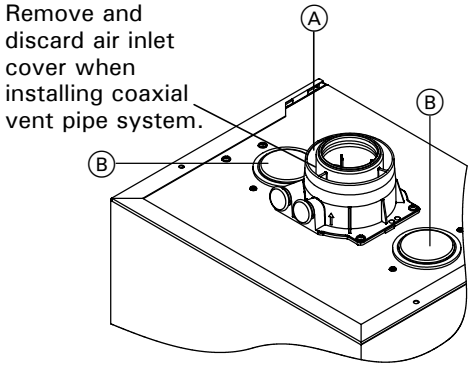


Fig. 59

Legend

Ⓐ Optional opening for combustion air intake
Ⓑ Air intake cover
Ⓒ Boiler adaptor
Ⓓ Coaxial increaser, 60/100, 80/125 (2″ to 3″)
Ⓔ 3″ diameter stainless steel starter adapter (max. insertion 2½″ / 64mm)

General Installation Information *(continued)*

Additional requirements for stainless steel vent pipe material *(continued)*

Starter adaptor for
WB2B 17-45,17-60, 30-80, 30-105

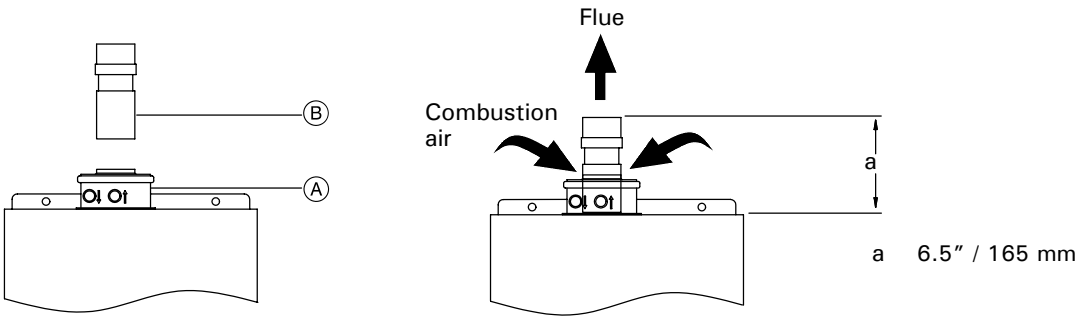


Fig. 60

Legend

Ⓐ Boiler adaptor
Ⓑ Stainless steel starter adaptor (max. insertion 2½″ / 64mm)

Component parts of the venting system - stainless steel

Termination
Coupling with Screen

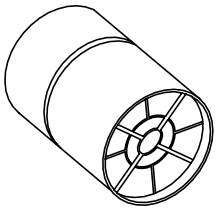


Fig. 61

Termination
Elbow with Screen
90° or 45°

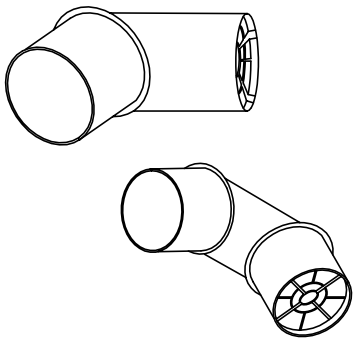


Fig. 62

Termination Tee with Screen

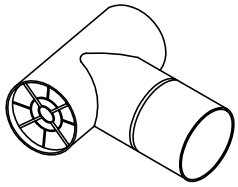


Fig. 63

Termination Hood with Screen

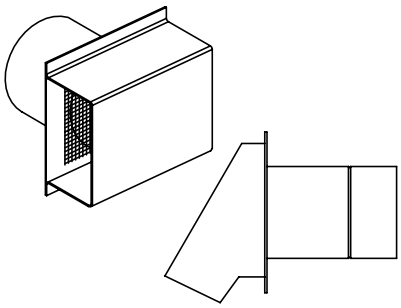


Fig. 64

General Installation Information *(continued)*

Additional requirements for CPVC vent pipe material

Use UL/ULC-listed special plastic pipe (CPVC) for horizontal (side wall) or vertical (roof) venting of the Vitodens boilers.
See table 49 below and contact Viessmann to order.

Prior to installation, check that the correct single-wall vent parts have been ordered and supplied.

See table 49 for special starter adaptor and bird screen models required for your installation.

Exhaust vent connection to boiler

The vent connection to the Vitodens boiler must be made with CPVC starter adaptors (see table 49.). The starter adaptors are intended for a slip fit and slide into the boiler adaptor with a gentle twisting motion.

For a vent pipe system, one wire mesh screen (bird screen) must be ordered from Viessmann. These parts are available in pre-cut diameters of 2", 3" and 4" (see table 49).

Note:
The Vitodens boiler has passed the zero inches vent clearance to combustibles testing requirements dictated by the Harmonized Standard ANSI Z21.13. CSA 4.9.2005 and therefore is listed for zero clearance to combustibles when vented with a single wall special venting system (CPVC material). The zero inches vent clearance to combustibles for the Vitodens boiler supersedes the clearance to combustibles listing that appears on the special venting system marking label.

Approved vent pipe material

Marking

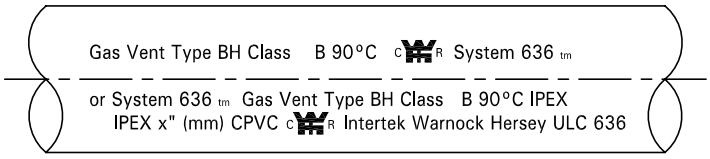


Fig. 65

IMPORTANT

For exhaust vent pipe material:
Do not use any other vent material.
Do not use galvanized pipe, plastic pipe and/or chimney liners of any kind.

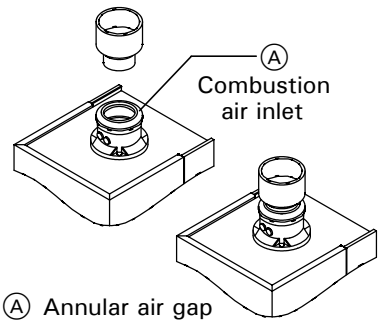
WARNING

The use of vent material other than listed CPVC, positive pressure vent pipe and fittings can cause property damage, severe personal injury and/or loss of life.

Table 49. Required starter adaptors and mesh screen for CPVC system

Part	Boiler Model	Size	Supplier	Qty.
CPVC Starter Adaptor	■ WB1B 10-29, 10-35 WB2B 9-19/26/35 ■ WB2B 17-45, 17-60 ■ WB2B 30-80, 30-105	2" 3" 4"	Viessmann	1
Wire Mesh Screen for Termination Elbows/Coupling	■ WB1B 10-29, 10-35 WB2B 9-19/26/35 ■ WB2B 17-45, 17-60 ■ WB2B 30-80, 30-105	2" 3" 4"	Viessmann	1

WB2B 17-45/60 and WB2B 30-80/105

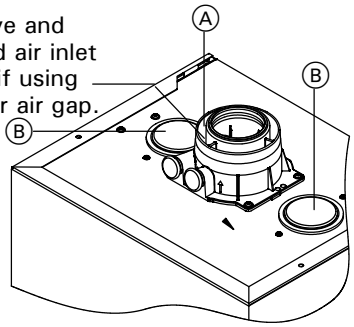


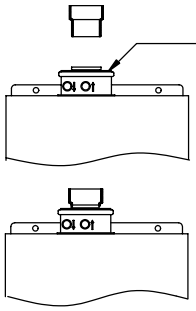
Ⓐ Annular air gap

Fig. 66

WB1B 10-29/35 and WB2B 9-19/26/35

Remove and discard air inlet cover if using annular air gap.





Remove and discard air inlet cover if used for combustion air intake.

Ⓐ Annular air gap
Ⓑ Optional opening for combustion air intake. Remove and discard cover.

Fig. 67

5368 815 v2.0 b

Side Wall Vent Termination

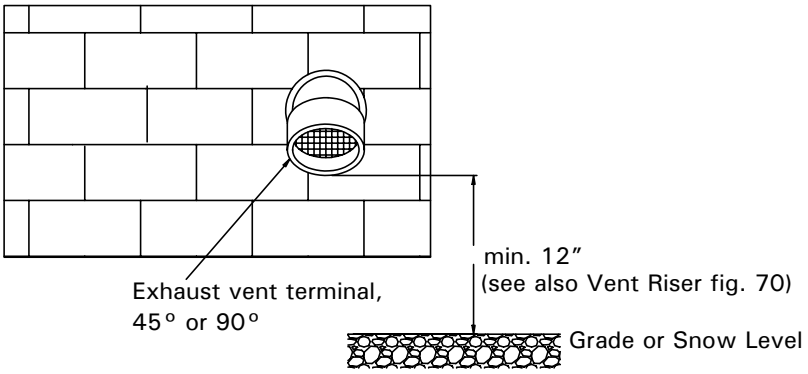


Fig. 68 Side wall vent termination (front view)

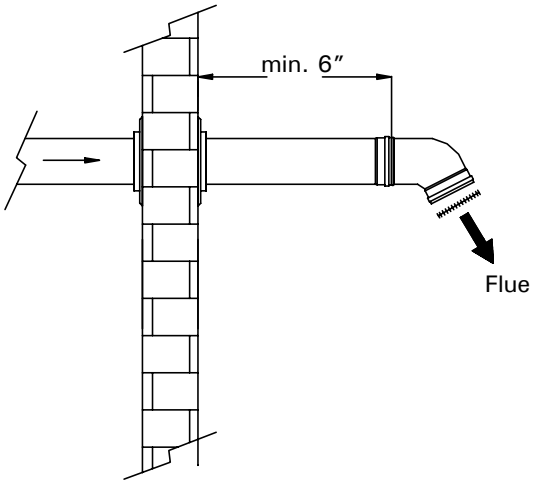


Fig. 69 Side wall vent termination (side view)

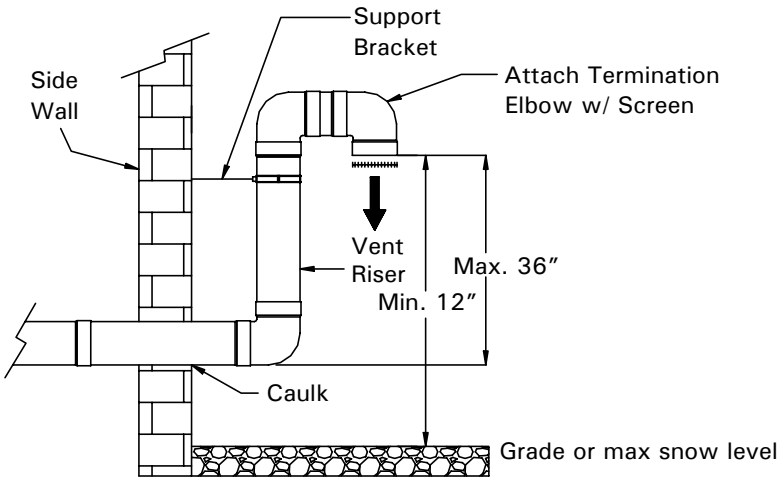


Fig. 70 Installation of field supplied vent riser

Vent Length Requirements

Maximum vent pipe length - horizontal

Size the exhaust vent pipe as specified in the table 50 This table lists the maximum allowable vent length in feet and meters of the exhaust piping. Vent diameter must not be reduced at any point in the installation.

Table 50. Maximum allowable equivalent length - horizontal

Boiler Model	System Ø	Max. equivalent vent length "a" *3
■WB1B 10-26, 10-35	2" / 51mm *1 3" / 76mm 4" / 102mm *2	86ft. / 31m 164ft. / 50m 200ft. / 61m
■WB2B 9-19, 9-26, 9-35	2" / 51mm *1 3" / 76mm 4" / 102mm *2	115ft. / 35m 148ft. / 45m 180ft. / 55m
■WB2B 17-45, 17-60	3" / 76mm 4" / 102mm	98ft. / 30m 148ft. / 45m
■WB2B 30-80, 30-105	4" / 102mm	131ft. / 40m

*1 *2" diameter system only available with CPVC system*

*2 *4" (3" to 4" increaser field supplied. Do not order Viessmann 3" or 4" starter adaptor).*

*3 *See figure* 71

IMPORTANT

First elbow not included in equivalent vent calculation.

Always include vent termination length in calculations.

Maximum of five 90° elbows allowed in the entire vent system (see fig. 73)
Minimum vent length is 3.3 ft. / 1m.

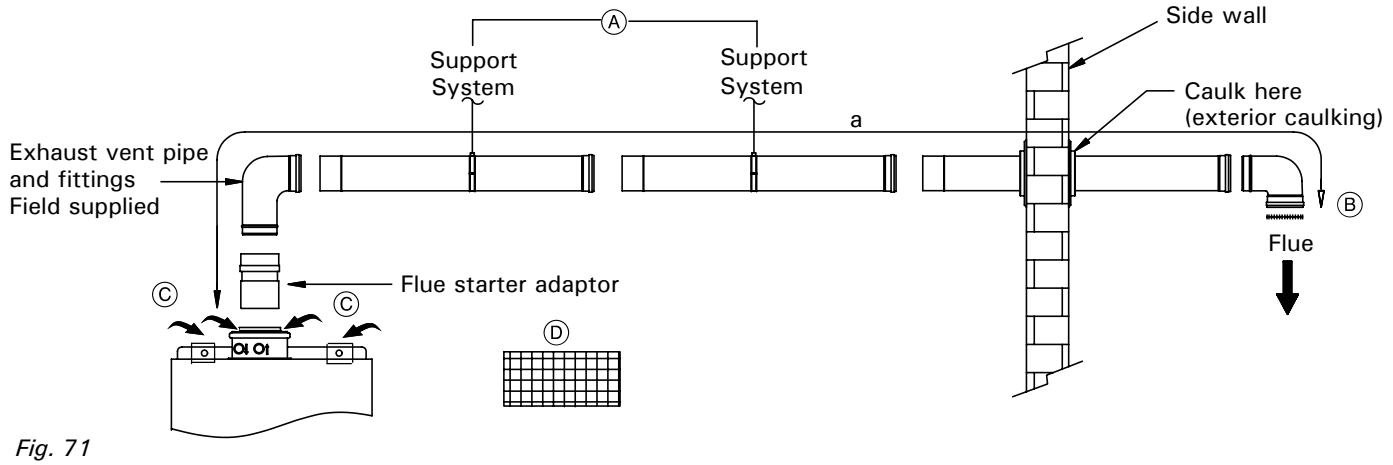


Fig. 71

Legend

Ⓐ Support system
Ⓑ Exhaust vent termination
Ⓒ Combustion air intake (left, right or through co-axial opening), *remove and discard air intake cover* (WB1B 10-26/35 and WB2B 9-19/26/35)
Ⓓ Combustion air opening
a Equivalent vent length (exhaust)

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Vent Length Requirements *(continued)*

Maximum vent pipe length - vertical

Size the exhaust vent pipe as specified in table 51 This table lists the maximum allowable vent length in feet and meters of the exhaust piping. Vent diameter must not be reduced at any point in the installation.

Table 51. Maximum allowable equivalent length - vertical

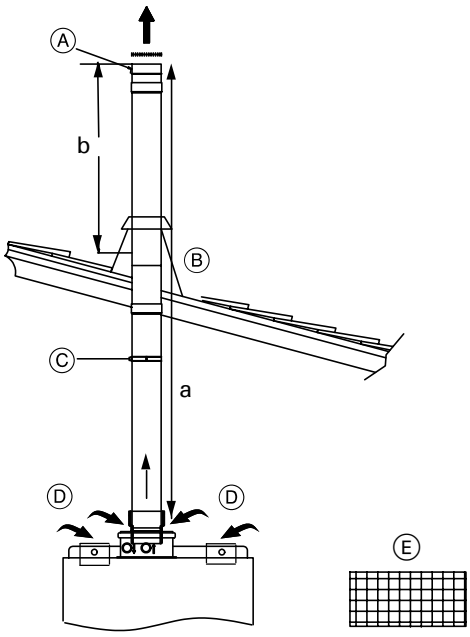
Boiler Model	System Ø	Max. equivalent vent length "a" *3
■WB1B 10-26, 10-35	2" / 51mm *1 3" / 76mm 4" / 102mm *2	86ft. / 31m 164ft. / 50m 200ft. / 61m
■WB2B 9-19, 9-26, 9-35	2" / 51mm *1 3" / 76mm 4" / 102mm *2	115ft. / 35m 148ft. / 45m 180ft. / 55m
■WB2B 17-45, 17-60	3" / 76mm 4" / 102mm	98ft. / 30m 148ft. / 45m
■WB2B 30-80, 30-105	4" / 102mm	131ft. / 40m

**1* *2" diameter system only available with CPVC system*

**2* *4" (3" to 4" increaser field supplied. Do not order Viessmann 3" or 4" starter adaptor).*

**3* *See figure* 72

Maximum of five 90° elbows allowed in the vent system (first 90° elbow is not included) (see fig. 73).
Minimum vent length is 3.3 ft. / 1m.

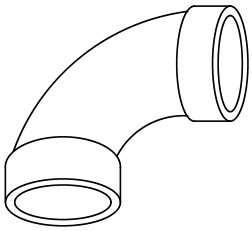


Legend
- Ⓐ Exhaust (straight coupling) with screen
- Ⓑ Flashings
- Ⓒ Support system
- Ⓓ Combustion air intake (left, right or through co-axial opening)*, remove and discard air intake cover* (WB1B 10-26/35 and WB2B 9-19/26/35)
- Ⓔ Combustion air opening
- a Equivalent length (exhaust)
- b min. 18" / 457mm max. 48" / 1219mm

Fig. 72

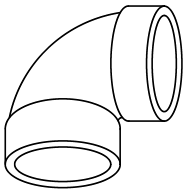
Vent Length Requirements

Standard long sweep elbows (for CPVC pipes only)



For plastic pipe only

90° long sweep elbow
equivalent to 5 ft. / 1.5m



90° short sweep elbow
equivalent to 8 ft. / 2.4m
(if used)

Fig. 73

Note:
If standard sweep elbows are used the allowable vent lengths are reduced.
One standard 90° elbow is equivalent to 8ft. / 2.4m of straight pipe.

Table 52. Standard long sweep elbows

Material	90° equivalent length elbow ft. / m	45° equivalent length elbow ft. / m
Stainless steel	3 / 0.91	2 / 0.61
CPVC plastic pipe	5 / 1.52	3 / 0.91

Component Installation Guide

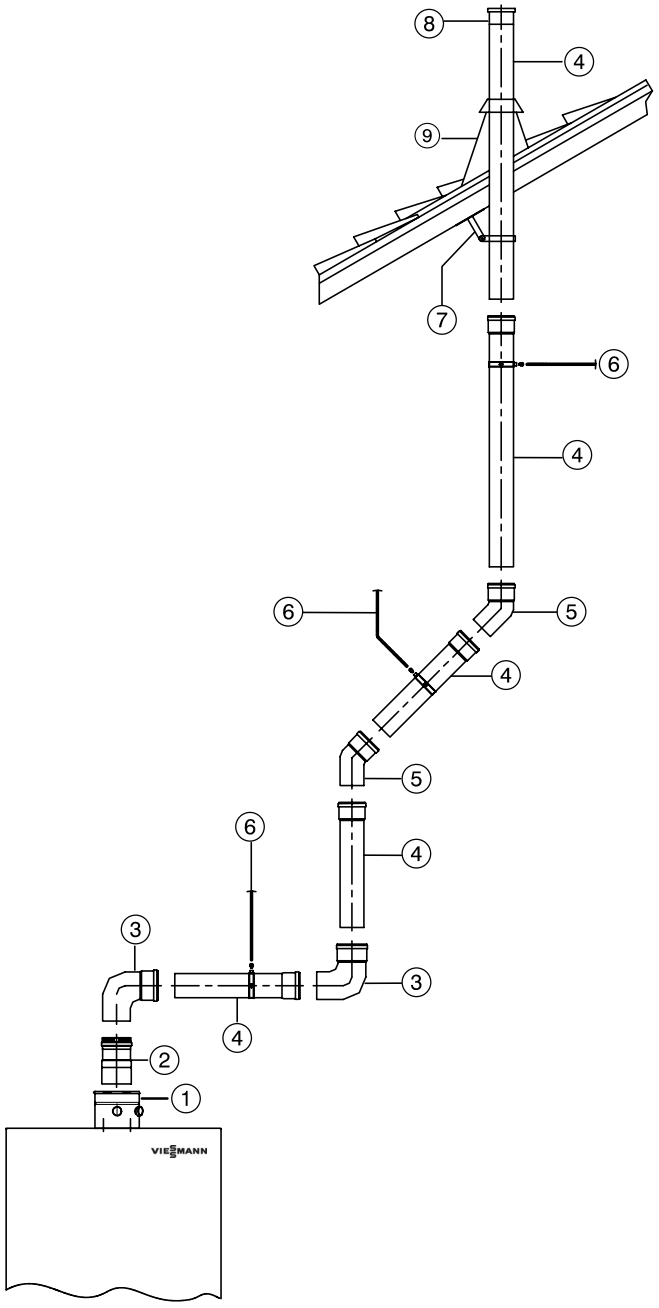


Fig. 74 General single-wall vertical venting layout

①	**Coaxial vent pipe adaptor** (comes pre-installed on Vitodens 100-W, WB1B 10-26, 10-35
②	**Vent pipe starter adaptor**
③	**Elbow,** 90°
④	**Straight pipe** *1
⑤	**Elbow,** 45°
⑥	**Suspension band / hanger**
⑦	**Wall band**
⑧	**Vent termination coupling** (w bird screen)
⑨	**Flashing and storm collar**

*1 *Available in different lengths.*

For more detailed information on component parts see product literature supplied by special venting manufacturer.

IMPORTANT

Ensure that the venting system is properly supported.
See page 70 for details.

Component Installation Guide *(continued)*

Single-wall vent pipe starter adaptor installation

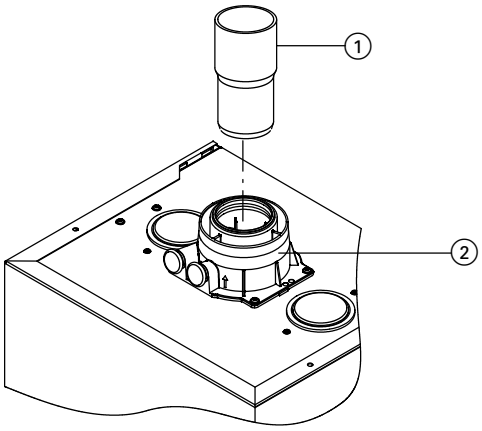


Fig. 75 Installing single-wall vent pipe adaptor Vitodens 100-W WB1B 10-26/35 and 200-W WB2B 9-19/26/35

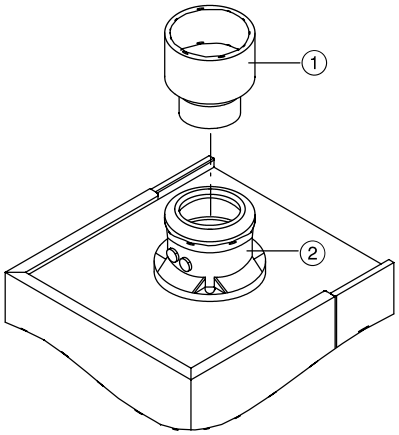


Fig. 76 Installing single-wall vent pipe adaptor Vitodens 200-W WB2B 17-45/60, 30-80/105

⚠ WARNING

Prior to installation, ensure the specially designed single-wall vent pipe adaptor end is smooth and chamfered to prevent possible damage to the sealing gasket of the boiler vent pipe adaptor (coaxial). Failure to comply could result in leakage, potentially causing personal injury or death.

1. Apply small amount of joint lubricant to end of single-wall vent pipe adaptor to ease insertion.

2. Slide special single-wall vent pipe adaptor ① fully onto boiler vent pipe adaptor ②. Do not apply excessive force and/or bend single-wall vent pipe adaptor ① when inserting. Force could damage gasket.

IMPORTANT

The boiler vent pipe adaptor comes pre-installed for all Vitodens 100-W and 200-W boilers.

Ceiling/Roof opening

Cut an opening for the vent pipe.

Size opening at least 1" / 25 mm larger than vent pipe diameter (for combustible as well as non-combustible material).

Component Installation Guide *(continued)*

Flashing and storm collar installation

Flashings and storm collars are field supplied. **Flashings and storm collars suitable for Type B vent materials (or better) may be used.**

To obtain flashings and storm collars, please contact your local vent material supplier. Follow the installation instructions supplied by the special venting manufacturer.

Vent termination location requirements - vertical

The vent must be installed observing local regulations in addition to National Codes, CAN/CSA-B149.1 or 2 (for installations in Canada) or ANSI-Z223.1 or NFPA 54 (for installations in the U.S.A.).

See table below for the following two conditions.

- For sloped roof applications with distance b greater than 18"/450 mm
- For flat roof applications

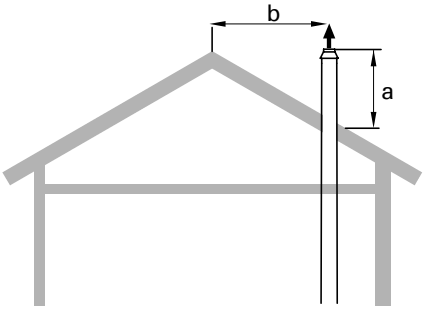


Fig. 77

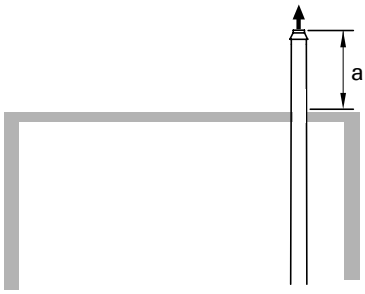


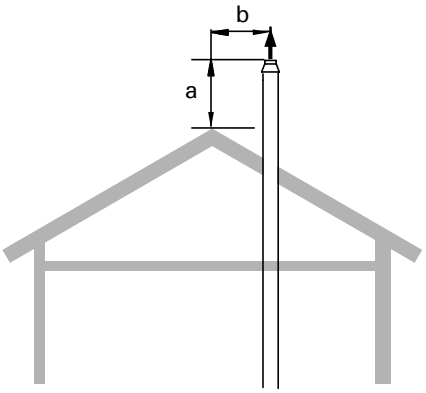
Fig. 78

Boiler Model	a (min. distance)
WB1B / WB2B	18"/450 mm

WARNING

Vent termination must be at least 12"/300 mm above the anticipated snow level (consult your local building authorities or local weather office). Locate vent termination in such a way that it cannot be blocked by snow.

- For sloped roof applications with distance b less than 18"/450 mm



a minimum 18"/450 mm
b <18"/450 mm

Fig. 79

A vent used in a special venting system with positive vent pressure and passing through a roof shall extend at least 18"/450 mm above the highest point where it passes through the roof and any other obstruction within a horizontal distance of 18"/450 mm.

The special vent system shall not be routed into, through, or within any other vent such as an existing masonry or factory-built chimney.

IMPORTANT

A masonry chimney flue may be used to route the venting system only if no other appliance is vented in the same flue.

5368 815 v2.0 b

Component Installation Guide *(continued)*

Single-wall vent termination installation

Install the vent termination coupling, along with the bird screen, for sloped or flat roof collars in accordance with the manufacturer's instructions.

General installation examples - vertical

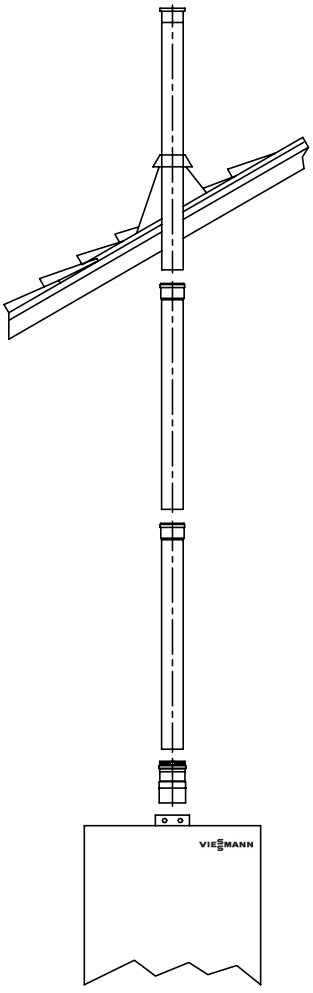


Fig.80 Sloped roof installation

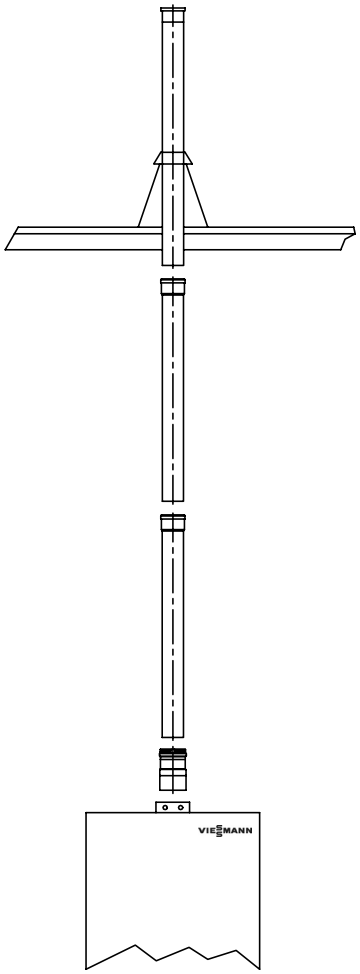


Fig.81 Flat roof installation

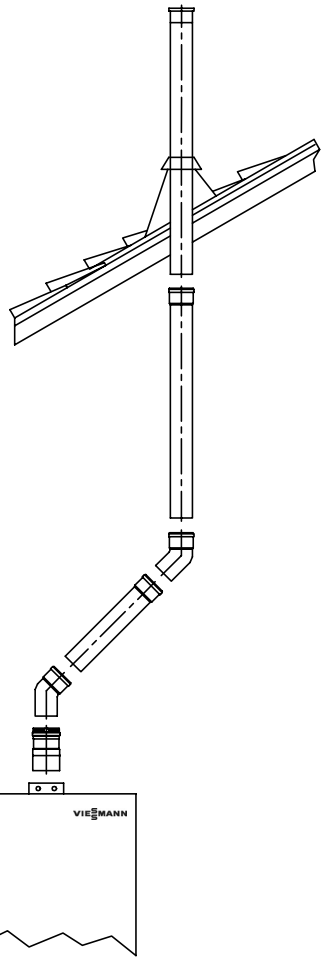


Fig. 82 Sloped roof installation with offset

IMPORTANT

Ensure that the venting system is properly supported; the Vitodens boiler is not designed to support the weight of the venting system.

Component Installation Guide *(continued)*

Equivalent vent length calculation example - vertical

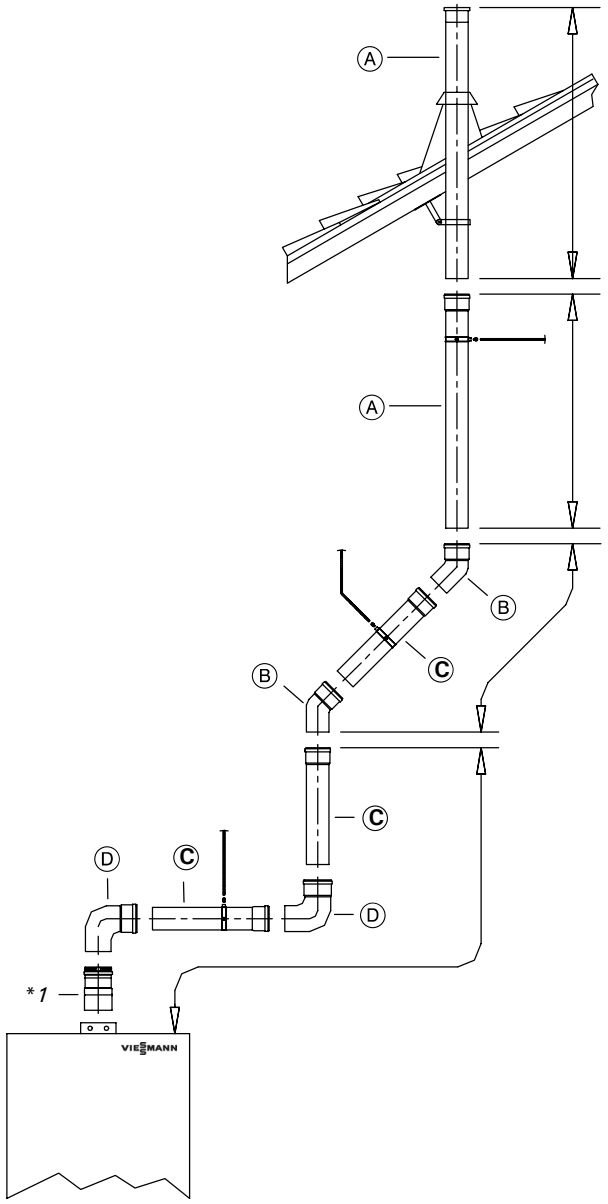


Fig. 83 Equivalent vent length calculation example

Equivalent vent length calculation example (stainless steel system)

Vitodens 100-W, WB1B 10-26, 10-35

2 x 90° elbow	6 ft./1.8 m
2 x 45° elbow	4 ft./1.2 m
3 x vent pipe (0.5 m)	4.9 ft./1.5 m
2 x vent pipe (1 m)	6.6 ft./2 m
Total equivalent length	21.5 ft./6.5 m

Above example will change as follows if using CPVC venting system (see fig. 73):

2 x 90° elbow	10 ft./3.1 m
2 x 45° elbow	6 ft./1.8 m
3 x vent pipe (0.5 m)	4.9 ft./1.5 m
2 x vent pipe (1 m)	6.6 ft./2 m
Total equivalent length	27.5 ft./8.4 m

Table 53.

Type of fitting	Equivalent length
90° elbow/ 90° inspection tee	1.6 ft./0.5 m
45° elbow	1 ft./0.3 m

Note:
See also table 52.

Ⓐ Vent pipe (3.3 ft./1 m)
Ⓑ 45° elbow
Ⓒ Vent pipe (1.6 ft./0.5 m)
Ⓓ 90° elbow

*1 *First pipe not included in equivalent vent calculation.*

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